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THE ORGANIZATION OF THE TREATMENT OF FRACTURES

BY

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Progress in any branch of medical practice is brought about by scientific discovery followed up by practical application. Beneficial results will only accrue if the first of these is implemented by the second. In malaria the mere discovery of the parasite in the blood of the mosquito would have had no practical results if measures had not been devised for the extermination of the insect. The identification of the bacillus in tuberculosis was a mere laboratory triumph, but the organization of open-air sanatoria has gone far to the cure of the disease.

In the matter of fractures the scientific discoveries have been that of Röntgen, by which the position of the broken bones could be seen instead of merely guessed at; that of direct operative treatment of fractures; and that of various mechanical devices whereby the displaced bones could be restored to a normal position and there retained. It has also been proved that recovery of a broken limb requires careful supervision for a long period, with functional exercise of the associated muscles. When, however, a large number of fractures are examined, it at once becomes apparent that the mere use of *x* rays, mechanical appliances, and physiotherapy has not been enough to ensure rapid or complete recovery. All these things have been in use since the beginning of the century, and yet at the present day there are many who are disabled for long periods or permanently crippled as the result of fractures. Investigation shows that the blame of this lies not with the scientific principles, but rather with the want of their application.

Nothing reveals this more clearly than the experience of the war. In the early days about 80 per cent. of the men suffering from gunshot wounds of the femur died, while, at the close, this figure was reduced to 10 per cent. And yet it may be fairly said that during that period no new method was discovered of treating wounds or fractures. The improvement was brought about chiefly by efficient organization—that is, by segregation, team work, and continuity of treatment. Now in times of peace, when the greater use of machinery and road accidents are increasing the number of fractures, it is incumbent upon us to ask why the lessons of the war should be forgotten, and why we should be content to allow unnecessary suffering, invalidity, and disablement when the means of prevention are so ready to our hand. This is the problem which was set for the Fracture Committee of the British Medical Association, and its report deserves the careful consideration of the medical profession, the administrators of the hospitals, the public health services, and the community at large.

It is only possible approximately to estimate the number of cases of fracture in this country. Probably there are about 141,000 every year treated in the voluntary and municipal hospitals, and this figure will be referred to again later on in estimating the financial loss suffered through lack of organization. In the majority of these hospitals there is no organization of fracture work. The patients are treated as ordinary surgical cases in the wards and out-patient department, and usually, when the injury is severe, they are sent from one institution to another; while there is no record of final results.

Fortunately, however, there are a few hospitals where matters have been put on a more satisfactory basis, and this has been due chiefly to the energy and enthusiasm of individual surgeons. In Manchester and Liverpool complete fracture services have been instituted, and it is from these two centres that the figures cited below have been taken. A few of the London hospitals, voluntary and municipal, have also instituted fracture clinics, in which general and orthopaedic surgeons co-operate.

Some Illuminating Figures

We are now in a position to compare the results of treatment of a large number of the common types of fracture as produced on the one hand by the "organized fracture clinic" and on the other by unorganized treatment. By the latter it must not be thought that unskilled or neglectful treatment is implied. On the contrary, the majority of cases have been under the care of hospital surgeons of known repute, but there has been no unity of control, no continuity of treatment, and no "follow-up." *Most of the patients in the "unorganized" group have actually received more treatment than those in the "organized" clinic.* The following table of figures shows the average period of disability in weeks and the percentage of cases of permanent disability in 1,081 fractures treated in organized clinics, compared with 276 cases from general hospitals or private practice.

Type of Fracture	Average Disability in Weeks		Percentage of Permanent Disability	
	Organized	Unorganized	Organized	Unorganized
Colles's	7	29	0.4	23.6
Scaphoid	11	46	1.6	58.3
Clavicle	5	22	1.2	5.0
Patella	26	57	3.5	44.0
Femur	37	60	9.0	61.0
Tibia and fibula ...	21	62	0.7	25.0
Ankle	11	47	0	32.0

Taking the common Pott's fracture, for example, every case now costs about £70 10s. in compensation, whereas it ought not to cost more than £16 10s., so that by sending such a case to an organized clinic a saving of £54 is effected. And this is by no means the whole argument; for there will be 32 per cent., or nearly one in three of all

the cases, with permanent disability, which represents a serious additional charge. It would probably be an underestimate if £200 was taken as the figure which it would cost the insurance company for a final settlement in cases of permanent disability. Thus in 100 cases of Pott's fracture treated haphazard we should have £5,400 more paid in compensation than if the cases had been treated at an organized clinic, and £6,400 to the thirty-two cases of permanent disablement, making a total of £11,800. And this in only 100 cases, and quite apart from loss of wages.

The average period of disability is more than three times as long in the patients in the "unorganized" group as in the "organized," and the percentage of disability is thirty-seven times as great. In the 276 cases treated without organization there was a loss of £13,000 in unnecessary compensation, and of £15,000 in wages to the men and women concerned. If there are about 141,000 fractures in this country in a year, and if not more than 41,000 are treated in organized clinics (and this is a very liberal estimate), the remaining 100,000 treated in an unorganized fashion would represent a loss of more than four and a half million pounds in compensation and of more than seven millions in wages each year. The matter is clearly one of great national economic importance.

Exactly the same thing has been demonstrated in Vienna by Dr. Böhler, who has produced the most practical evidence that "it pays" to organize the treatment of fractures. In Austria for many years there has been a State insurance against accidents. In 1911 there was no organized fracture treatment, but in 1929 Böhler had established his accident hospital. One hundred and twenty-four cases of fracture of the long bones of an exactly similar nature were compared in the two periods, and the amount of compensation paid was noted for comparison as follows:

Total Compensation (Expressed in Thousands of Austrian Schillings) after a Two-year Period of Observation

Number of Cases	Type of Fracture	1911	1929	Saving
19	Femur	192	134	58
24	Leg bones	158	33	125
31	Ankle	106	37	69
9	Humerus	43	11	32
41	Forearm	129	42	87
Total 124	Fractures of the Long Bones	628	257	371

The saving effected was almost equal to the total maintenance cost of the hospital in that year (396,000 schillings), so that the other 6,000 accident cases were treated free of cost. The matter may be summarized as follows. There are at least 100,000 persons every year in this country who suffer from fractures, and whose treatment is so conducted that they suffer disability three times as long as they need, and 36,000 of them are left permanently disabled when they might have made a complete recovery.

But mere numerals make very little appeal to most of us, and it may be helpful to consider individual cases in order to understand the reasons for prolonged and permanent disability. I have arranged the following cases under three groups: (1) those in which failure has been due to lack of supervision; (2) those in which it has been due to error in primary treatment; and (3) those in which it has been due to divided responsibility. But in reality there are usually many factors contributing to the bad result in each case.

Lack of Supervision

CASE I

A man, aged 25, was brought into the casualty department of a general hospital on a Saturday evening with a severe injury to the right ankle, and was seen by the casualty officer, who was only recently qualified. The *x* rays were not available. The leg was put up on a back splint and foot-piece and the man sent away, being told to report on Monday. On Monday he called in his own doctor, who, finding the leg neatly bandaged on a splint, allowed him to remain at home "for a time." This extended to four weeks, and the patient then went back to hospital, where a typical Pott's fracture was revealed by *x*-ray examination. He was put down for admission, and was received three weeks later. There was firm union in a bad position. Operation was declined, and permanent disability resulted. (Fig. 1.)

Comment.—*X* rays should always be available, and if this is not possible any serious accident should be admitted or transferred to another hospital.

CASE II

A girl of 12 was brought to the casualty department with an injury to the elbow, diagnosed as a fracture of the lower end of the humerus. No bed was available, and the arm was put up in plaster and she was sent home. She reported again in two days' time, when pain was very severe and the hand was blue and swollen. The plaster was removed. There was ischaemic paralysis, and permanent disability resulted. (Fig. 2.)

Comment.—It is unjustifiable to treat serious injuries without proper supervision. If the child had been admitted the pain and swelling would have been ample warning of danger, and the plaster would have been split or removed.

CASE III

A man, aged 27, healthy and strong, had a football accident and suffered fracture of the tibia and fibula without much displacement. The leg was encased in an "unpadded" plaster cast, and the patient was sent home. Two days later he returned in great pain, when the toes were found to be blue. The plaster was removed; there was gangrene of the foot, and amputation followed. Comment seems needless. (Fig. 3.)

These three cases are examples of what is happening with great frequency. The casualty officer of a general hospital usually has no beds at his disposal, and unless the case is likely to be acceptable to the general surgeon his easiest course is to deal with it himself in the first place and to defer transferring it to the surgeon. Emergency beds are always available for ruptured viscera, but not for broken bones.

CASE IV

A man, aged 34, had pain and swelling following a fall on the right shoulder. An *x*-ray in the antero-posterior view appeared to show impacted fracture of the neck of the humerus in good position. The arm was fixed by bandage to the side, and the patient was sent to his own doctor in the country. Six weeks later the arm was still stiff and painful. Further *x*-rays from the axilla showed gross displacement. There was operation and prolonged disability. (Fig. 4.)

Comment.—In a fracture clinic this mistake would have been found on the occasion of the first weekly attendance, when it could have been rectified.

CASE V

A painter, aged 43, fell from a ladder on his feet. He was not detained in hospital, nor were any *x*-ray photographs taken. Several months later, after being kept in bed at home, he was sent to the out-patient department, where it was found that the os calcis had been crushed in both feet. There was permanent disability. (Fig. 5.)

Comment.—This patient should have been kept in hospital, or at any rate *x*-ray examination should have been made, in the first place. The inaccessibility of the *x*-ray apparatus at odd times for accident cases is a very serious defect in many hospitals.

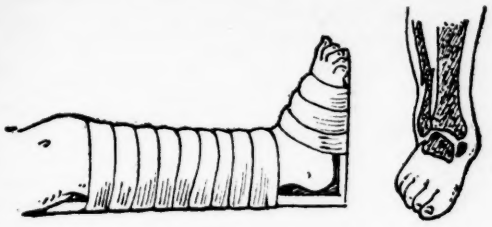


FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.—A, Neck of humerus. Displacement missed. Only antero-posterior *x*-ray taken. B, As seen from axilla six weeks later. Prolonged disability.

FIG. 5.

FIG. 6.

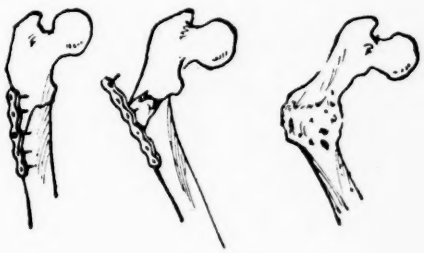
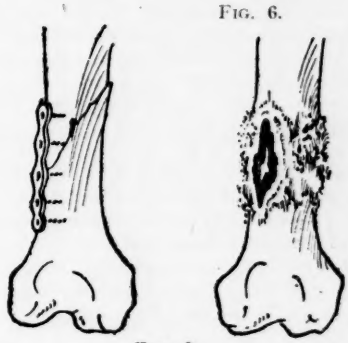


FIG. 7.

FIG. 8.



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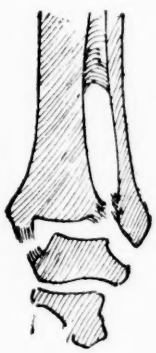

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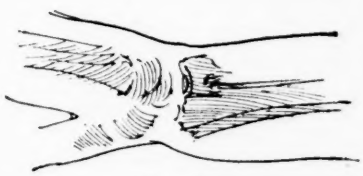

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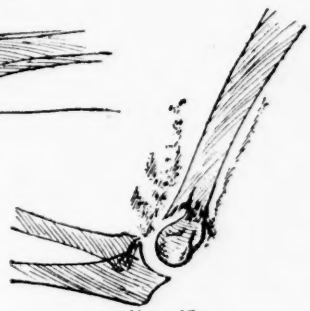

FIG. 12.

FIG. 13.

FIG. 14.

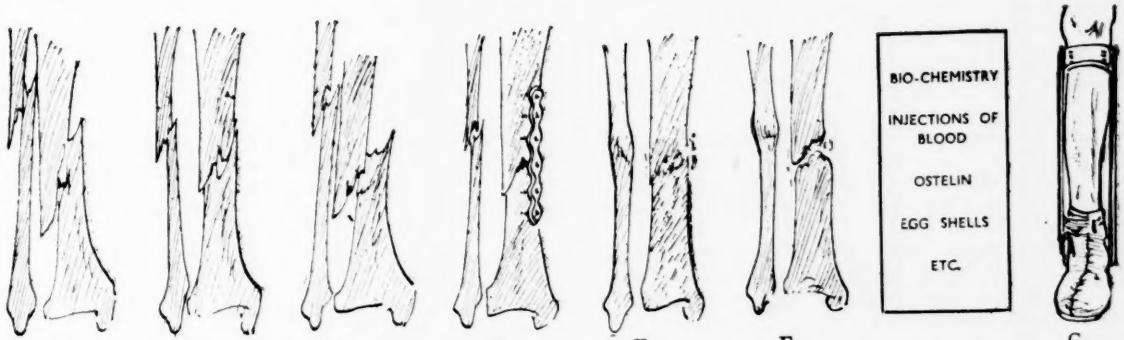

FIG. 15.—A, On admission to surgical ward. B, After traction. C, *X*-ray department; traction removed for *x*-ray. D, Plated. E, Plate removed after six weeks. F, Massage and passive movements. G, Walking appliance; permanent disability.

CASE VI

In this case the patient, a man aged 50, had a Pott's fracture with displacement of a large triangular fragment from the lower posterior margin of the tibia. He was admitted to hospital and the fracture was reduced under an anaesthetic and put up in plaster from the toes to the knee. He was sent home after a week. Secondary displacement occurred with dislocation of the foot backwards. A policy of inactivity was pursued for more than a year; finally, an arthrodesis of the ankle had to be performed. There was permanent disability. (Fig. 6.)

Comment.—If there had been continuous supervision and repeated *x*-ray examination the dislocation would have been detected in time to be corrected by open operation or double transfixion.

Errors in Primary Treatment Followed by Discontinuity in After-care

CASE VII

As the result of a motor smash the patient in this case suffered closed fracture of the upper end of the femur. Both local doctors agreed that a specialist was required. He came, accompanied by an anaesthetist, an assistant, two nurses, and the full equipment for operating. The femur was plated by a six-inch plate and six screws, but there was no external fixation. The upper part of the plate loosened and three screws came out, resulting in gross angulation. The plate was removed, and the leg laid between sandbags. There was union with gross angulation, four inches shortening, and permanent disability (£3,000 compensation from the insurance company). (Fig. 7.)

Comment.—Quite apart from the debatable subject of the propriety of plating as primary treatment for a fractured femur, the tragedy was really a question of the patient "falling between two stools." If the two country doctors had treated him at home with a Thomas splint, or if the city specialist had taken him to his own clinic, he would not have suffered this disaster.

CASE VIII

In this case there was open fracture of the tibia and fibula in a man of 20. The tibia was plated the next day, and the leg put on a Thomas splint. The wound broke down, and the patient was transferred to hospital in his own home town after six weeks. There was extensive sepsis and necrosis, and the leg had to be amputated. (Fig. 8.)

CASE IX

A woman, aged 25, as the result of a motor accident, had an open fracture of the lower third of the femur. She was taken to a cottage hospital, and a surgeon was summoned from a distance. The femur was plated; this was followed by brisk suppuration, and the plate was removed. There was osteomyelitis with formation of a sequestrum, and the knee was stiff. Permanent disability resulted. (Fig. 9.)

Comment on Cases viii and ix.—Personally I consider that the plating of open fractures is fundamentally wrong, but when, added to this primary error, the patient is operated upon by one man and taken charge of by another, disaster is likely to follow. I am aware that brilliant results are obtained by Sherman and his colleagues in plating open fractures, but let no one attempt to follow this practice who has a less perfect organization of team and technique!

Discontinuity of Treatment

CASE X

A man, aged 32, with a Pott's fracture, was admitted to the wards of a general surgeon. The latter, not very pleased at having his beds taken up by this type of case, instructed his house-surgeon to "put him up" and get rid of him. Imperfect reduction was performed under anaesthesia; the leg was put up in plaster, and the patient was transferred to a municipal hospital. The leg was kept in the original plaster for six weeks, when the plaster was removed. There was marked varus with some foot-drop. Massage, etc., was given for six months, but permanent disability resulted. (Fig. 10.)

Comment.—This is all too common. The patient has nominally been under the care of Mr. A., a consulting surgeon of repute. Therefore the medical officer of the municipal hospital does not interfere with the treatment, and when the plaster is removed it is too late. Actually Mr. A. has never seen the patient, and the only active treatment has been carried out by a house-surgeon, qualified a couple of months.

CASE XI

A woman, aged 50, had a Colles's fracture; the arm was reduced and put up on a Carr splint. After one week she was sent to the massage department with no special instructions. The splint was removed daily, and massage and passive movements applied assiduously. There was marked pain, swelling, and decalcification, associated with secondary displacement. Permanent disability resulted. (Fig. 11.)

Comment.—If this case had been in an organized clinic, seen at least once a week, the secondary displacement would have been noticed and the fracture would have been reset and fixed.

CASE XII

A boy, aged 12, had supracondylar fracture of the humerus without much displacement. The arm was put up with full flexion of the elbow, and he was sent out with instructions to the doctor that "movements should be carried out daily." The boy was daily held down by his father while the doctor carried out forcible movements. This continued for some weeks. Result: marked myositis ossificans, with stiff elbow. Permanent disability. (Fig. 12.)

Comment.—Such cruel, useless treatment could never have been carried out if there had been the unity of control and continuity of treatment of an organized clinic.

CASE XIII

A man, aged 27, suffered open fracture of the tibia and fibula in a motor accident. The wounds were infected. He was taken to a cottage hospital, and the leg was put up on a splint and foot-piece. He was retained for two and a half months for the infected wounds to heal. There was firm malunion, with a two-inch shortening and some valgus. Finally he was sent to an orthopaedic surgeon. Reconstructive operation was refused, and he was fitted with a walking appliance. There was permanent disability. (Fig. 13.)

Comment.—This case affords an example of one of the commonest errors. A severe case is accepted in a hospital, where efficient treatment is not carried out at the time, and the patient is then sent to a specialist too late.

CASE XIV

A man, aged 33, had a comminuted fracture of the lower third of the right femur. He was taken to a cottage hospital, where skeletal traction was applied. The pin was removed in two weeks, the surgeon having handed the case over to a colleague. The patient was kept for ten weeks with the leg lying on a cradle splint. There was gross malunion, angulation, shortening, and a stiff knee, with consequent permanent disability. (Fig. 14.)

Comment.—If an *x*-ray examination had been made at the end of a month the bad position would have been seen and could have been corrected. Skeletal traction should have been continued for at least six weeks.

CASE XV

Through a riding accident a man, aged 30, had a closed oblique fracture of the tibia and fibula. He was placed in a general surgical ward and traction applied, with apparently good results. He was also sent to the *x*-ray department (traction being discontinued for transport). Naturally, overlapping had occurred. So-called failure of conservative methods suggested operation. Plating was carried out in the approved fashion, and the plate was removed after six weeks as a matter of principle. The patient was then sent for massage and passive movements. After a few weeks there was marked pain, swelling, and angulation, and no callus; the bones were atrophic. A physiotherapist and a biochemist were consulted. Light, diathermy, deep *x* rays, calcium compounds, ostelin, etc., were administered. After a year there was definite non-union with painful false joint. The patient was fitted with boot and irons, and suffers permanent disability. (Fig. 15.)

Comment.—If there had been skeletal traction for six weeks all this would have been avoided. The bones were devitalized by plating, and then the plate removed and passive movements applied at the very moment when the bones were in their weakest condition.

The B.M.A. Model Scheme for Fracture Clinics

These cases provide fair examples of why so many fractures are slow in recovery and why so many patients suffer permanent disability. Unnecessary suffering and unemployment are being inflicted on thousands, while millions of pounds are wasted by insurance companies, and further millions are lost by workmen. It is easy to prescribe the remedy for this state of affairs, but desperately difficult to have this remedy carried out. The remedy is, of course, organization of treatment, with its triple conditions of unity of control and responsibility, continuity of treatment, and efficient follow-up. The model scheme for an organized fracture clinic is set out by the Fracture Committee of the British Medical Association, and may be studied in actual working in Manchester, Liverpool, and London. Every large hospital, whether voluntary or municipal, should have such a clinic.

Fracture cases must no longer be treated by casualty officers and house-surgeons, and then the patient sent away home, or to the municipal hospital, without adequate instructions. Cases must no longer be treated at two or three different hospitals, without proper co-ordination of the staffs. If cases of bad fractures are admitted into cottage hospitals they should be transferred to the nearest clinic within a short period and not kept for months, or else a special surgeon should be available for consultation at such hospitals, with power to carry out treatment or to advise transfer.

At first sight it would appear that the municipal hospitals are the institutions where the reformed system can most readily be instituted, since these are all under the control of the Ministry of Health. But this is unsatisfactory unless there is an honest liaison between the voluntary and municipal hospitals. Unless there is co-operation, cases will be taken first to voluntary hospitals and early treatment carried out, and then they will be transferred to municipal hospitals; thus the evil of divided responsibility will dominate the situation. Therefore the voluntary hospitals must be prepared to organize their own fracture clinics and then co-operate with the municipal hospitals with one staff, one head, and an efficient follow-up system. In cities where there is more than one voluntary hospital each institution should either organize its own fracture clinic or else refuse to treat fractures, and refer the patients to the hospital which has such a clinic. At present most voluntary hospitals are so overwhelmed by the problem of financial stringency that the managing bodies are disinclined to adopt any new policy which cannot pay its way. The provision of extra paid assistants in the new fracture clinic, the installation of portable *x*-ray apparatus, the payment of clerical staff to keep the follow-up records, all involve the outlay of money. But we have also to face another difficulty, which is that specialization in the treatment of fractures is not a remunerative job and therefore does not attract many young surgeons.

Consider what happens when a motor accident occurs in which the car is smashed and the driver's bones are broken. The car is sent to the works and the man to hospital; the car is paid for, but the man's bones have to be mended as a matter of charity! It would be only just and fair for insurance companies to be asked to pay for the repair of the broken bones. But they certainly would only do this if compelled by legal enactment, and the innovation would be an addition to their present liabilities. On the other hand, if insurance authorities could be convinced that organization of fracture treatment would effect so much saving in compensation as more than to cover the cost of the treatment, then the matter would bear quite another aspect.

We claim to have proved that this actual saving would be effected. Böhler has proved it in Vienna, where the national insurance company profits by his organization. Therefore, we are asking insurance companies not to incur further liability, but rather greatly to lessen their present liability. The proper payment of a fracture clinic would involve from £500 to £1,500 a year at hospitals of 100 to 300 beds. This would cover the payment of the director for part-time work, one to three assistants for whole-time work, and the clerical staff. If some force of reason or persuasion could induce the insurance companies to offer the sum I have suggested to every suitable voluntary hospital which would properly organize a fracture clinic, I believe that the present system of *laissez-faire* would give way to one of eagerness to adopt the new suggestion.

ANALGESICS IN LABOUR*

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Discussions on analgesics in labour are so often confined to a series of cases recited with results to mother and child that I intend to approach the subject from a somewhat different aspect, and for the following reasons. (1) Whatever analgesics are employed the results to mother and child in most published series are essentially the same—good; in a search of the literature on the subject I can find no series in which the conclusion reached by the author is that his or her special analgesic is either of little value or even harmful. (2) It is usually left to the critic, who is often an advocator of some different method, to find the fallacies in the therapy employed by others. (3) It is difficult enough to follow a series of statistics from a monograph, but it is still more difficult to follow them when a few lantern slides, bristling with mortality rates, are thrown on a screen just long enough for the observer to fail to read the last line, and almost impossible to do so when the figures are rapidly read out as part of the text of an address. (4) The literature on the subject is voluminous, and having read with a mixture of pleasure and weariness a large part of that published in the last ten years or so, I have come to the conclusion that, though many of the methods described are sound in theory, in practice they are impossible to put into effect as a routine, more particularly in domiciliary midwifery—the practice in which most of us are mainly interested. My reading has led me to the conclusion that a great proportion of the writing on the subject only deals with one part of labour—namely, the second stage—and that no differentiation seems to be made between analgesia, amnesia, and anaesthesia.

Now by analgesia I mean the relief of pain, and when the term refers to labour it must obviously apply to the whole of labour—that is, from its commencement to the termination of the third stage. This brings me on to the dangerous ground of just how far analgesia is desirable and expedient in the interests of the mother and the child for the whole of a labour, as well as the degree to which the analgesia should be pushed. We are all agreed that complete analgesia can be secured by full doses of chloroform, but even the most ardent advocates of complete analgesia

* Read before the Chesterfield Division of the British Medical Association on January 18th, 1935.

for the whole of labour would hardly countenance giving chloroform for twenty-four or more hours, as would frequently be necessary to attain complete analgesia with this drug.

This brings me to the question of the duration and degree of analgesia that are ideally to be aimed at, but before dealing with that question I must briefly review the actual mechanism of pain and certain general considerations of this all-important symptom. At the meeting of the British Medical Association held in 1934 considerable time was spent in discussing pain *per se*, and a masterly opening of the subject was made by David Waterston and Macdonald Critchley, upon whose papers I propose to draw in this address.

Our knowledge of the changes brought about in the body by the influence of pain is very scanty, and what we do know is most confusing; in fact, it tells us little, if anything, of the cause or the severity of pain, and whether the pain itself is the cause of the reaction.

Psychological Concomitants of Pain

There are many psychological factors associated with pain. For example, the pain associated with labour so dominates the patient's mentality that while the stimulus is acting she is, as a rule, unaware of other internal or external impressions. At the same time we are often impressed by the fact that the more severe pains of the second stage of labour seem to be borne with greater fortitude than are the lesser pains of the first stage. This fact would seem to point to a subconscious recognition by the patient that the pains are accomplishing a purpose which will in due course bring about the abolition of the stimulus, and are therefore "protective" in character. This postulates the necessity for applying analgesics during this all-important first stage of which patients are so intolerant.

Another aspect of pain exemplified by labour is the disorganization of the sense of time associated with painful experiences. Under the influence of hyoscine the flight of time seems to be more rapid, and this is one of the valuable assets of this drug in labour, as after its administration, even when not pushed to the stage of coma, or even sleep, what has up till then seemed to the patient an eternity, now has a lesser time value and therefore a less terrifying aspect.

Under the stress of any form of severe pain nature has made a wonderful provision to meet the stimulus by the advent of sleep. There are numerous examples in literature of this well-known fact—for example, Jack London in *The Star Rover* describes the vivid dreams of Darrell Standing whilst undergoing torture. We have all seen the same phenomenon in patients during labour. Many a time we have watched the profound sleep of psychical exhaustion which has succeeded each labour pain, following which the patient has described the dreams she has had, which have floated her into the realms of fantasy, or been filled with the more mundane things of domestic life.

Mechanism of Pain Production

We know little of the mechanism of the production of pain in labour, or indeed of pain in any of its forms; there is no stimulus which produces pain with every application, and the nerve paths along which the stimulus travels are unknown. Why, for example, should the transition from the contractions and relaxations of the uterus in pregnancy, to a like process with the mere addition of the phenomenon of retraction of the muscle fibres, creating the state we call labour, be almost invariably associated with intense suffering?

At the same time, until something of the mechanism of pain production is known, we cannot understand fully the action of anaesthetics and analgesics, nor have we a scientific basis for producing relief from this symptom. Variations in the stimulus applied to different nerves we know do not alter the quality of the impulse transmitted by those nerves—for example, division of the optic nerve, or the cutaneous nerves of the skin, only gives rise to a sensation of light or tactile sense and not to pain. Probably researches will lead to no *one* underlying cause for the processes and mechanisms operating in the various qualities of pain from different stimuli.

Though the labour pains of one woman have much the same character as those of another, we are all aware that the intensity, quality, and quantity of the pain vary throughout wide ranges under the stimulus of this same cause—namely, labour. Labour pains are often accompanied by other symptoms such as pallor, fainting, and sweating, but as these are not invariable concomitants we must assume that the various paths carrying the pain impulses are different from those others carrying the stimulus which excites the sympathetic system. Different pain responses can be elicited by the same stimulus applied to different tissues, and in the complex anatomy involved in labour there is probably a combination of different varieties of pain which we allude to generically as labour pains. Sir Thomas Lewis has proved experimentally that pain can be elicited from muscles which have not a proper blood supply, by the production locally of a chemical material which he calls the "p substance," and that the introduction of this substance into an area creates a condition of susceptibility in which stimuli usually painless cause pain from the affected area. Maybe it is this substance which causes the pain in intermittent claudication, and it possibly accounts for the difference between the painlessness of contractions of the uterus during pregnancy, and the painful contractions produced in labour when the phenomenon of retraction reduces the blood supply to the organ. Further, Forman has shown that areas of heterotopic visceral pain, or referred pain, have this "p substance," which can be abolished by the local injection of not only anaesthetic preparations, but even normal saline, which presumably dilutes this substance and renders it inert.

It is not improbable that future researches into the mechanism of the production of pain in labour will be along the lines foreshadowed in the researches of these two workers, and that we shall actually attack the pain-producing mechanism to accomplish the ideal of painless childbirth. In the meantime, however, we must accept the fact that pain does accompany the labour contractions of the uterus, that we know little or nothing of either the chemical or hormonic stimulus causing it, nor yet of the paths along which the stimuli travel to reach the seat of appreciation. Our attempts at relief, then, must of necessity be empirical, with all the attendant risks of such unscientific therapy.

Practical Considerations

Passing now to the more practical discussion of when the relief is to be afforded and in what form, I would say first that in my belief the greatest factor in the relief of pain we can afford is to instil into the patient a right attitude in which to approach her ordeal; to aim at a calm and fearless frame of mind in her, best brought about by a complete confidence in her accoucheur. This confidence can be best obtained by, humanly speaking, offering her a safe passage to herself and her unborn infant, and telling her that there is no pain in labour which it is impossible to relieve, and that this relief will not be withheld should her endurance fail or the necessity arise. Assuming that the mechanical factors of the labour and the chemical factors of bodily health are normal, I look on this physiological mental state as the most

important process in the relief of pain. Those long-drawn-out, lingering labours due to primary uterine inertia seem more particularly to be associated with that highly strung, nervous woman who approaches her labour with a sense of dread, and whose lack of confidence in her accoucheur, usually a midwife, arises from the knowledge that by law the latter is precluded from the use of more than the simplest remedies against pain. How often do you encounter these cases in your own private or hospital practices? Far less, I am sure, than in those cases to which you are summoned by a midwife.

Having now embarked on the conduct of this labour with a patient in the right mental state to bear with fortitude a part of her ordeal, when should drugs or other therapy be applied to relieve pain, and what form is this therapy to take?

In all cases in which operative intervention is necessary, or in which relaxation is required for purposes of diagnosis or to prevent perineal damage at the end of labour, we are agreed that anaesthesia is essential, but we are not justified in giving sedatives and analgesics which add to the risks of either the mother or the infant.

The difficulties of constant observation in domiciliary practice, and the additional expense involved, are surely a prime responsibility of the country as a whole, and should not be insurmountable ; but much can still be done under existing conditions.

I do not propose to advise you, in the present conditions under which we work, to conduct your confinements in a Utopian manner, by employing a skilled anaesthetist to spend hours giving gas and oxygen by some such apparatus as that of McKesson, which is cumbersome, requires constant, almost daily, practice to use efficiently, and is not without its disadvantages and even risks, though a complete state of analgesia and amnesia can be attained by its employment for hours at a time if necessary.

There are simpler remedies which neither inhibit the effect of the uterine contractions nor add to the risks of the labour in any of its three stages, and which can be more easily given.

Chloral as a Sedative

This drug, used either alone or in combination with potassium bromide, still holds pride of place as a sedative in the early part of the first stage of labour. In fact, in the Jessop Hospital it has become almost a routine to administer a dose of chloral to a patient admitted in the early part of labour. It may be given with safety at any time, and it is a matter for individual decision when to start its use. For my own part; my guiding rule, in the absence of physical signs of exhaustion on the part of the mother, is to wait before giving anything in the first stage until there is an insistent request from the patient herself for relief from pain.

When the drug *is* given it is best administered in much larger doses than the *Pharmacopoeia* defines. I have never seen any ill effect from the giving of 30 to 40 grains and repeating the dose in one hour—in fact, I never give less than 30 grains as an initial dose. Patients taking this in sips of 4- to 6-ounce mixtures, in either water or glucose water, rarely suffer from the vomiting which this drug causes in more concentrated solution.

Though a few are unaffected by its action, its sedative value is undoubted in most cases, and it is of exceptional value in nervous and excitable patients to tide over the time until a drug more analgesically effective is required, or as an adjuvant to morphine in the prolonged labours of primary inertia.

Contrary to the teaching of pharmacologists, who state that the drug causes relaxation of unstriped muscles, we have found that, given in large doses, the opposite effect seems to occur in the uterus in many cases, though the possibility exists that it may exert a specific effect on the cervix and cause its relaxation.

Hyoscine Narcosis

This drug, used in combination with morphine by a complicated therapy involving the almost constant attendance of the doctor, and certainly of a trained nurse, often in a very expensive nursing home called a "twilight sleep" home, lost favour with most obstetricians because of these facts. A more scientific contra-indication to this combination is the undoubted risks of its use in a prolonged labour, and its attendant evils, together with the common condition of asphyxia or oligopnoea in the infant. As a result of the possibilities of these adverse effects being due to the morphine a new technique for the administration of hyoscine alone was elaborated by Bertha van Hoosen of Lyola University, U.S.A., and tested out in this country in 1929 by Jennings at Queen Charlotte's Hospital, with eminently satisfactory results. After trial in many places, including the Jessop Hospital, his paper received much favourable notice, and for my own part I have used a modification of his method to a great extent since his communication appeared in 1929.

In his technique somewhat heroic doses of hyoscine hydrobromide are employed — namely, 1/100 grain repeated in half an hour, and again in the second half-hour, with readministration of 1/100 grain in each succeeding two hours. I found that in such large doses, so frequently given, an almost constant supervision of the patient was demanded, partly because of what I must admit is an unjustified fear that these large doses are dangerous and might lead to respiratory centre paralysis, and partly because in a few cases the patient became so violent that chloroform had to be administered to restrain her reactions to the drug. Taking a middle course between the school of "twilight sleep" and the van Hoosen school, it is my custom when using hyoscine therapy to administer 1/100 grain, to be repeated in three-quarters to one hour, depending on the reaction of the patient to the first dose, to give a third dose in another two hours, and a fourth in three further hours. Though this in essence is the dosage and time, I frankly admit that I am more guided by the reactions of the patient to the drug than by a hard-and-fast rule of time and dosage. The stage of labour at which to commence the therapy is roughly, in a primigravida, when the cervix is taken up and the os from three fingers to half dilated, and the patient having regular pains of fifteen to thirty seconds' duration at intervals of not longer than ten minutes (usually seven to eight minutes). This period in a normal labour averages about eight to ten hours after its commencement, and the subsequent duration is apparently shortened, so that it is complete in a further six to eight hours ; hence it is rare for more than four doses, and usually less, to be given, though no ill effects seem to accrue if five or six administrations are necessary.

Often the preliminary dose is given with a few whiffs of chloroform ; the patient is kept as quiet as possible in a room illuminated with just sufficient light to render ordinary attention possible. In a multigravida the time to begin treatment in order to obtain amnesia is not so easy to gauge as in a primigravida, but again the guiding principle is good pains every five to ten minutes, and lasting fifteen to thirty seconds. I will add here that the nearer to the time of delivery the treatment is commenced the greater will be the degree of amnesia that the patient exhibits afterwards. As a rule the patient does not come strongly under the influence of the drug until

the second dose has been given, and close observation of the patient would show that the pains are felt, though not remembered, so the use of the term "analgesia" rather than "amnesia" is open to criticism.

The restlessness of the patient during the pains varies from a slight bodily movement accompanied by groaning to violent fighting and shouting, which, fortunately, is rare, but can be somewhat alarming to the attendants and others in the house. The majority of patients fall between these two extremes, and the reaction bears no relation to the strength and durations of the contractions, but is rather a measure of the patient's idiosyncrasy to the drug. Between the pains most patients are perfectly quiet, and lie with a flushed and slightly cyanotic face, dilated pupils, and slightly raised pulse rate, and complain from time to time of thirst. Once again I must add that a good nurse is necessary if a state of complete narcosis, as evidenced by the "memory test," is to be maintained, as such restraint as can be obtained by a tactful but firm demand for quietude on the part of the patient is less likely to precipitate attempts at getting out of bed than actual mechanical compulsion—also catheterization from time to time is often required.

With a fully attained hyoscine narcosis, even the actual delivery of the head over the perineum is a time of complete oblivion to the patient. I am sure, however, that it is wiser, if only to attain a greater degree of sterility by a completely anaesthetized patient, to give chloroform or some other anaesthetic for the actual crowning and delivery of the head.

The advantages of the use of this drug, given as I have described, are: (1) it is simple to give; (2) it rarely *is* accompanied by hyperexcitability; (3) the severe labour pains of the end of the first stage are mostly forgotten, and certainly those of the second stage; (4) the voluntary expulsive efforts of the second stage, if diminished, are not stopped; (5) oligopnoea does not occur in the infant; (6) the third stage is not prolonged; (7) post-partum haemorrhage does not occur.

One contraindication I must mention, and that is albuminuria, because hyoscine diminishes the kidney excretion, and I think some other analgesic should be given in these cases.

Morphine in Labour

As in many other conditions, morphine is still one of the most valuable, if not the most valuable, and certainly most used drugs we employ as a sedative and analgesic in labour. Its special use is for cases of primary inertia in which chloral alone seems to be insufficient; in cases of colicky uterus, in which a local contraction ring develops as the cause of delay; and for those cases in which hyoscine is undesirable because of the environment or of inadequate supervision due to the lack of a skilled nurse.

You are all so conversant with its use that I need not discuss the analgesic action of morphine, nor its effects on uterine contractions, sleep, thirst, vomiting, respiration, pulse, and foetal heart rate. I will merely state that, given in therapeutic doses such as are employed in other conditions, no ill effects seem to accrue to the mother or to the infant, provided no dose is given later than two to three hours before the child is born. It is thus undesirable to use during the second stage.

Other Drugs in the First Stage

The very multiplicity of other drugs used in the first stage of labour as analgesic remedies only goes to show that we have not yet found the ideal. I will content myself with enumerating a few, without giving the details of their administration.

The fact that magnesium sulphate synergizes with morphine and ether has hardly been given the trial in this country which Gwathmey's proved claims would seem to warrant. I have used his technique in a few cases and found it good but tedious, and not always easy to get the required effect, and I have not pursued its trial, as I can see no advantage over the easier and at least as effective hyoscine therapy.

Of the barbiturate group of drugs I have only given a trial to nembutal—using up to 7½ grains in twelve hours—but one or two of the patients became so profoundly pallid and comatose that its further use alarmed me. It is only fair to state that its advocates are most enthusiastic about it, and I recently heard a most convincing address by Reynolds of Manchester on the satisfactory administration of this drug in a series of 243 cases.

Regarding the uses of sodium amytal, pernocton, evipan, and avertin in labour my experience is ***nil***. I have occasionally used paraldehyde (paraldehyde ʒi in ʒss olive oil per rectum for each stone of body weight, maximum ʒi), but not in a sufficient number of cases to express an opinion of its value.

Relief of Pain in the Second Stage

You may wonder why I have up to now hardly mentioned either chloroform or nitrous oxide, both of which have been largely to the fore lately in use as analgesics and amnesics rather than as anaesthetics. The reason is that up to the present I have mainly been dealing with the first stage of labour, and the two main advocates of these remedies, Rivett with chloroform and Minnitt with gas and air, claim them as valuable only in the second stage or when the pains are particularly strong at the end of the first stage.

An investigation is at present being carried out by the British College of Obstetrics and Gynaecology, working with a grant from the National Birthday Trust, on five methods of analgesia in labour: (*a*) chloroform capsules, (*b*) Minnitt's gas apparatus, (*c*) Mennell's chloroform apparatus, (*d*) Browne's chloroform inhaler, and (*e*) paraldehyde.

The Jessop Hospital is testing Minnitt's apparatus and Browne's inhaler. One of the objects of the whole research is to explore the possibilities of any of these or other anaesthetics being placed in the hands of midwives for use in their own practices as analgesics in labour.

In the meantime, I have found no better analgesic in the second stage beyond the drugs I have mentioned than the chloroform *à la reine* as used in 1847 by Sir James Young Simpson, or the more modern gas and oxygen, by the apparatus of McKesson or Boyle.

Anaesthetics

As an anaesthetic, in contradistinction to an analgesic, in normal labour or for simple obstetric operations, I still belong to the die-hard school which thinks that chloroform is safe, and I use it as a routine. Gas and oxygen, and also ether, I use in selected cases, where, for example, an element of shock is present, or if I have the services of a skilled anaesthetist, and he prefers it, in nursing-home or hospital practice. But I think if a poll were taken of the anaesthetics used in labour chloroform would head the list still, and I doubt if many could recount cases of fatality or even ill effect. The cases where its use is undesirable are as well known to you as to me.

Conclusion

In conclusion, I would stress the point that individuals differ in their sensitiveness to pain with an apparently identical stimulus both from one another and under varying circumstances. The threshold of sensitivity is reduced by debilitating diseases, cold, and fatigue, as well as by such social factors as artistic temperament, culture, education,

and a delicate upbringing. All these factors must be taken into account in deciding the degree, duration, and method of analgesic relief.

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LIGATION OF SPLENIC ARTERY FOR ADVANCED SPLENIC ANAEMIA

BY

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In spite of a great amount of excellent research there still exists an almost complete ignorance as to the cause of splenic anaemia. Whether it is a primary disease of the spleen or not, removal of the spleen may bring about a remarkable improvement in the patient's condition, even although the disease has progressed to a late stage. In these late cases, however, the operation mortality remains very high, largely owing to the fact that all are poor surgical risks, and that in most of them adhesions to the diaphragm are present. These adhesions may extend from the costal margin, up over the whole of the outer surface of the large spleen, and include the upper pole and part of the under surface. As the separation of this area, which lies so deeply and so far back, cannot all be done under direct observation, control of bleeding is very unsatisfactory. Some of the adhesion vessels are quite large and haemostasis most difficult, and yet one of the essentials for success is a dry field at the end of the operation. It follows, therefore, that cases occur in which splenectomy is quite unsafe.

Fortunately, it can now be shown that the relatively simple procedure of ligation of the splenic artery will bring about atrophy of the spleen and clinical results similar to those of splenectomy, even in cases in which the disease has progressed to the stage of cirrhosis of the liver, ascites, and gastro-intestinal haemorrhages.

A review of the literature reveals the fact that ligation of the artery has been used with success in most of the conditions for which splenectomy is indicated. Long (1905) performed the operation on a case where a floating spleen had become fixed by adhesions. Lantz (1914) ligatured the artery, owing to a displaced spleen having become firmly adherent to the base of the bladder, and causing pain on urination and defaecation. At the end of six months, bimanual examination failed to reveal the spleen. Stubenrauch is reported to have applied the method with success to a case of cutaneous, renal, and intestinal haemorrhage. Valdoni (1929) reports a case of haemolytic jaundice so treated. It was, however, a reference by J. W. McNee (Lettsomian Lectures, 1931) to the possibility of such a measure that suggested its application to the case which follows.

Case Record

A married woman, aged 26, consulted me on December 12th, 1929, owing to general weakness, which dated back to a miscarriage three months before. There was apparently no excessive blood loss, and the pregnancy had reached three months. She looked pale, and an abdominal examination revealed enlargement of the spleen, the notched border of which was easily palpable. No other abnormality was noted. When told of the splenic enlargement, she remarked that when 7 years of age—that is, nineteen years before—a doctor who had examined her made the same observation.

Blood count: Red blood cells, 5,400,000 per c.mm.; white blood cells, 4,400 per c.mm.; haemoglobin, 81 per cent. Differential count: polymorphs, 65 per cent.; lymphocytes, 28 per cent.; large mononuclears, 4 per cent.; eosinophils, 3 per cent.

Splenectomy was advised, but was not enthusiastically received, and owing to her change of residence she was not seen again until March 26th, 1931. She staggered into the room, extremely pale, and with enormous abdominal distension. She gave a history of having missed three periods, of being troubled with vomiting, and finally suffering from several severe attacks of haematemesis, for which she was attended at her home in a country town. The abdomen was huge, with spleen and ascites, and she appeared to be about three months pregnant. She was admitted to hospital, and nine pints of fluid were slowly withdrawn. The lower border of the spleen reached the level of the anterior superior spine. Blood count: Red blood cells, 2,600,000 per c.mm.; white blood cells, 3,500 per c.mm.; haemoglobin, 35 per cent. Differential count: polymorphs, 56 per cent.; lymphocytes, 38 per cent.; large mononuclears, 2 per cent.; eosinophils, 5 per cent.

Following the tapping of the abdomen there was slight improvement in the general condition, but melaena occurred. Weekly tappings became necessary to keep her comfortable. Three weeks after admission, in spite of recurring gastro-intestinal haemorrhages, she was somewhat improved, and it was decided to empty the uterus, which was done with a minimum of disturbance by means of tents. Following this the haemorrhages ceased although the ascites continued.

Further delay was caused by an attack of perisplenitis and left basal pleurisy. The temperature rose to 100°–101° F., the spleen was tender, and there were friction sounds over the splenic area in front and the left base posteriorly. At the end of five months from admission, during which time she was regularly tapped at intervals of seven to fourteen days, it was decided to remove the spleen if possible. After careful typing and cross-typing she was given 10 oz. of blood by the citrate method, and as there was not the slightest reaction this was followed in five days by 15 oz. from the same donor, and the abdomen opened (September 8th, 1931).

The huge spleen was found to be hopelessly adherent to the diaphragm and the abdominal wall. A small area was separated, but the adhesion was remarkable for its firmness. The liver was pale and slightly nodular, but did not appear to be enlarged.

It was decided to ligature the splenic artery, and this was done by means of a double ligature about 9 cm. from the spleen. After the abdomen was dried out, the surface of the liver was roughly scrubbed with dry gauze, and was sutured to the parietal wall. The omentum was then sutured to the scarified peritoneum on either side of the incision, while two tails were carried through slots in the rectus sheath.

The patient stood the operation very well. The spleen became extremely tender, but this gradually passed in about

ten days. Fluid collected, and tapping was necessary two weeks after operation. Thrombosis occurred on the seventh day, the right arm being affected. The spleen gradually diminished in size and the interval between tappings increased.

On July 6th, 1934—nearly three years later—she was in good health and able to do her own work. Her periods, though scanty, were regular. Blood count: Red blood cells, 4,000,000 per c.mm.; white blood cells, 3,400 per c.mm.; haemoglobin, 75 per cent.; colour index, 0.9. Differential count: polymorphs, 65 per cent.; lymphocytes, 29 per cent.; large mononuclears, 1 per cent.; eosinophils, 5 per cent.; slight anisocytosis. Blood platelets, 210,000 per c.mm.

December 3rd, 1934: She complains of occasional abdominal discomfort, due, no doubt, to the adhesions. Apart from this she is active and well. The spleen is not palpable. Blood count: Red blood cells, 4,500,000 per c.mm.; white blood cells, 4,800 per c.mm.; haemoglobin, 80 per cent. Differential count: polymorphs, 68 per cent.; lymphocytes, 25 per cent.; large mononuclears, 1 per cent.; eosinophils, 6 per cent. Blood platelets, 230,000 per c.mm.

Commentary

The following points seem to be of interest:

1. The long history of splenomegaly—namely, nineteen years.

2. The value of ligature of the splenic artery only, in a seemingly hopeless case, as shown by the rapid reduction in size of the spleen, and the improvement in general health, which continues over three years after operation.

3. The apparent recovery of the liver. Ascites was present for six months prior to operation.

4. The occurrence of thrombosis. (It is regretted that platelet counts before operation were not done.)

5. That ligation of the splenic artery is apparently a safe procedure, provided it is done sufficiently far from the spleen to avoid interference with the communication between the splenic and left gastro-epiploic arteries.

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Census of England and Wales, 1931: General Tables, which is now available at H.M. Stationery Office, price 11s. net, contains the principal census statistics of England and Wales. It sets out the populations by sex of constituent regions and counties and of every individual borough, urban district, and rural district, distinguishing between the numbers enumerated in and those resident in each area, and showing the changes that have occurred in recent intercensal periods. It also provides a full analysis of the age and marital conditions, and the distribution of the population, and illustrates the transformation which has taken place in these important characteristics in a series of comparable records going back over the past ninety years. Particulars are also given of the birth places and nationalities of the population, and of the number of persons enumerated in various classes of institutions. The volume may be regarded as completing the normal series of publications presenting statistics derived from the 1931 census. In conjunction with the recently published housing volume it presents for the country as a whole statistics with reference to that body of subjects which have already been dealt with county by county in the appropriate local volumes, and provides aggregated figures which have hitherto been obtainable only by laborious extraction from some sixty-three separate county records. Additional statistics from the 1931 enumeration, hitherto unpublished, are also included—namely, those in respect of populations of county court circuits and districts, and of the personnel of the defence services and mercantile marine absent from the country on census night, and not enumerated, therefore, with the general population.

UNCERTIFIED DEATH

AN ANALYSIS OF 200 POST-MORTEM EXAMINATIONS DONE IN PUBLIC MORTUARIES AT THE REQUEST OF THE CORONER

BY

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The type of case coming to necropsy varies very greatly in accordance with the source from which the subjects are drawn. The voluntary and teaching hospitals specialize in acute conditions, the county council hospitals combine acute with a large number of chronic cases, while the special hospitals provide material from an obviously limited field. Private practice is, for obvious reasons, almost unknown ground from the pathological standpoint, and so, to a certain extent, is the field covered by the jurisdiction of the coroner.

The coroner can not only order an inquest to be held, with or without a necropsy, he can also order a post-mortem examination to be made and a report on it rendered to him. This can be done in cases where no doctor has been in attendance, or where the doctor in attendance, not being satisfied as to the cause of death, refuses to give a death certificate, or where the registrar of deaths is not satisfied with the doctor's death certificate, or under various other kindred conditions. Of these coroners' post-mortem examinations, a few cases associated with sensational inquests get into the lay press, but the vast majority are seen by the pathologists and his assistants alone, while the report is read by the coroner only.

Scope of Present Analysis

The present paper is an analysis of 200 consecutive cases examined at the request of the coroner for the Central London area. It is compiled from copies of the reports made at the time, the cause of death being that suggested in the report, and edited neither in the light of later experience nor in that of the inquest findings, if any.

The chief disadvantage affecting this work is that, from the very nature of things, the ordinary methods of case taking cannot apply, and in point of fact to get *any* medical history is rare, to get a detailed and reliable one the exception. For example, of fifty-three inquests a previous medical history was available in twenty-five—that is, 47 per cent.; but of 147 simple inquiries only twenty-four (16 per cent.) had any such history. The limitations on the pathological side are also to be regretted. Reports in the present series are in the vast majority of cases based on naked-eye appearances only; sections were rarely cut, chemical methods were of the simplest, though bacteriological tests when required were full and complete.

It seems in place here to say a word about the two most interesting classes of case—coronary disease and myocardial disease. No case was diagnosed as coronary disease unless there was either a definite clot, or an infarct, or such extreme narrowing of the coronary arteries as could not fail very greatly to restrict or even occlude the circulation. Cases where death was ascribed to myocardial disease invariably showed a pathological myocardium, but without such gross changes in the arteries as would account for death. As a matter of fact, they formed a perfectly definite type on their own account, and not by exclusion only.

The cases have been divided into six groups, of which the first four are more or less orthodox, the

last two convenient but unconventional. They are as follows:

Cardiovascular disease	110 cases
Pulmonary disease	23 ,,
Intestinal disease	11 ,,
Diseases of nervous system	5 ,,
Death by external agencies	40 ,,
Special diseases	10 ,,

Cardiovascular Disease

As might be expected, cardiovascular disease forms both the biggest and the most interesting group. I have subdivided it as follows:

Coronary disease	51 cases
Myocardial disease	20 ,,
Disease of the aorta	14 ,,
Valvular disease	7 ,,
Cerebral haemorrhage	12 ,,
Congenital malformations of the heart	4 ,,
Pulmonary embolus	12 ,,

CORONARY DISEASE

These cases are made up as follows: generalized atheroma of the coronary arteries, without either clot or infarct, twenty cases; generalized atheroma with clot, eight, with infarct, six; predominant disease of the right coronary artery, four (with clot two, with infarct two); predominant disease of the left coronary artery, twenty-four (anterior descending branch, with clot thirteen, circumflex branch, with clot two, and anterior descending branch with infarct, nine cases).

The cases diagnosed as coronary disease where there was neither clot nor infarct all showed, as has already been stated, extreme atheromatous narrowing of the arteries, with, as a rule, generalized fibrosis of the heart muscle, though on occasion this was absent. As to the previous history of these cases, of twenty-one nothing was known except that they either collapsed and died suddenly or were found dead; in nine the subject was stated to have enjoyed normal health up to the time of death, while six had a story of vague ill-health. Of the remainder, nine had suffered from pain in the chest, four from indigestion, and two only from heart disease. The average age was 68 years—in twenty-nine males 66 years, and in twenty-two females 70.5 years. The age distribution was as follows:

	45–49	50–59	60–69	70–79	80 and over
Male	2	5	11	11	0
Female	1	1	5	13	2
Total	3	6	16	24	2

From the pathological standpoint few of these cases differed from the type commonly found. Two cases showed early bulging of a fibrous infarct, but not to the extent which could be called an aneurysm. Three infarcts, all recent, had ruptured into the pericardium, and one papillary muscle had ruptured. One case had a history of diabetes.

MYOCARDIAL DISEASE

Only cases uncomplicated by anaesthetics, etc., are included. The picture presented in this group is by no means constant, the pathological conditions causing them being in all probability equally various. The types of disease found may be classified as follows:

Diffuse small areas of fibrosis	14 cases
Localized larger areas of fibrosis	3 ,,
Diffuse fibrosis with fatty infiltration	3 ,,
Fatty infiltration	3 ,,
Acute cloudy swelling	1 case

In trying to explain these types the first suggests scarring as a result of a narrowing of smaller branches of the coronary arteries; in none, however, was there gross atheromatous disease of the larger arteries. The second type also suggests coronary disease, though again it was not found. The cases with fatty infiltration were always obese, and usually female. As to histories, seven had none whatever beyond the fact of sudden death, six were stated to have enjoyed good health, two had pains in the chest, two chronic bronchitis, and three had been diagnosed as heart disease. The average age was 68 years: men (eight cases), 66 years; women (twelve cases), 69 years. The age distribution is shown below.

	50–59	60–69	70–79	80 and over
Male	2	3	3	0
Female	2	2	6	1
Total	4	5	9	1

Two of these cases stand out in presenting unusual features.

One, a man of 54, formerly an oarsman, and with a story of a "strained heart," collapsed with a dilated thin-walled left ventricle which showed much fibrosis, and with poor coronary arteries; another, with the common diffuse fibrosis, had "main d'accoucheur" and a dilated stomach, so that perhaps tetany played a part.

The above group is, to my mind, the least satisfactory of any. The conditions found are accepted and recognized as a reasonable cause of death, but the actual mechanism of death is obscure. Cardiac ischaemia, probably the direct result of ventricular fibrillation, sounds reasonable, but its proof is to seek. An investigation into the physiology of the dying heart—chemical, histological, electrical, and clinical—is long overdue. In all cases of heart disease death, though long and obviously portended, is as a rule sudden, and it therefore seems not unlikely that, though the primary causes are various, the secondary, final causes are more closely allied, if not identical. The practical value of such work would be very great. The cases showing fatty infiltration form another interesting problem. It has not been possible in the present series either to confirm every diagnosis histologically or to measure the position of the heart within the chest, but as all the cases are noted as being obese it seems probable that they belonged to that type of case, so well known radiologically, in which the heart is displaced upwards and is rendered unduly horizontal by excess of abdominal fat. If this suggestion is true it adds very greatly to the importance of this comparatively common type.

DISEASE OF THE AORTA

Under this heading five different conditions are brought together.

Aortitis occluding orifices of coronary arteries	2 cases
Ruptured aortic aneurysms	3 ,,
Rupture of atheromatous aorta	5 ,,
Idiopathic rupture	3 ,,
Traumatic rupture (one of many injuries)	1 case

1. *Aortitis.*—In neither case was there a history of syphilis. One, a woman of 40, showed an inch band of aortitis which almost entirely occluded the two coronary orifices, of which the left was blocked by a clot. The remainder of the aorta and of the coronaries was healthy, the aortic valves not deformed. The other, a man of 52, showed severe aortitis with deformity of the valves—the usual picture. The absence of any deformity of the aortic valves in the first case is worthy of note.

2. *Ruptured Aneurysms.*—These all followed the commonly accepted pattern, and require no comment.

3. *Atheromatous Rupture.*—That five cases of this condition should be seen seems unusual. All except one died suddenly; that case had time to drive back to her home. Two cases had a history of "wind" or indigestion; three gave no history. As to the pathological findings, three had large ruptures of the top of the arch, two of the ascending aorta. In no instance was there any story of a sudden strain, but all were up and about when the attack began.

4. *Idiopathic Rupture.*—This condition is not as rare as might be thought, a fair number of cases having been described, especially in American publications. It is hoped to write up these cases, and another one not

included in this series, more fully and with complete histological and bibliographical details in due course. The three cases seen were all over 62; none showed either obvious heart or aortic disease. One showed an old healed rupture of the intima only.

5. *Traumatic Rupture.*—An aorta completely torn across at the junction of the arch and the dorsal aorta was one of the multiple injuries following a fall from a third-story window.

VALVULAR DISEASE

Of the seven cases encountered, six were old rheumatic hearts, and one an acute ulcerative disease of the aortic valve causing a syncopal attack while the subject was out walking. Of the six old cases, one died from obstruction of a stenosed mitral valve by a fragment of clot detached from the left auricle, three with simple or combined aortic stenosis died during anginal attacks, one only 18 years old. Two cases of mitral disease died, one of congestive failure and the other of a syncopal attack.

CEREBRAL HAEMORRHAGE

Of the twelve cases, nine were the result of arteriosclerosis; three were caused by rupture of congenital "berry" aneurysms. Of these latter, one alone had any relevant history—that of occasional attacks of unconsciousness and of frontal pain.

CONGENITAL MALFORMATIONS OF THE HEART

Four cases were met with. One was a "cor biloculare" which lived for thirty minutes.

One, aged 2 months, with a patent foramen ovale and ductus, died of bronchopneumonia, and one, aged 1 year and 2 months, with an incomplete septum (ventricular and auricular), died of bronchopneumonia. The last case was a boy of 18. He had a vague story of being easily tired, and showed a suggestion of clubbing of the fingers. He died while walking. His heart showed a greatly hypertrophied left ventricle with much fibrosis. The whole blood supply was from the left coronary artery, the right being represented by a twig to the auricle and a minute twig to the ventricle, each with a separate orifice. Apparently this was a congenital hypertrophy, as no mechanical cause was found.

PULMONARY EMBOLUS

Of the five cases examined three showed clots in the iliac or femoral arteries continuous with thrombosed varicose veins. One showed clots in the internal iliac, though with no definite area of thrombosis. One showed no clots in any way comparable to those found in the pulmonary artery.

Pulmonary, Intestinal, and Nervous Diseases

The twenty-three cases of pulmonary disease fall readily under the following headings: pneumonia, twelve cases; asphyxia, four cases (all infants); atelectasis, two cases; and phthisis, five cases.

Two classes only account for the eleven cases of intestinal disease: gastro-enteritis, two cases (both infants); and abdominal emergencies, nine cases. The emergencies were two cases of haemorrhage from a gastric ulcer, and one from a gastric carcinoma; there were also two cases of general peritonitis following the perforation of a gastric ulcer. The others were a strangulated hernia through a natural hole in the great omentum, a strangulated right femoral, and a strangulated umbilical hernia. Finally, there was a case of apparently paralytic distension—the symptoms and appearance of an acute obstruction, but with no discoverable mechanical factor.

Of the five cases of diseases of the nervous system, two were cerebral tumours (both encapsuled), one a basal meningitis, one a case of convulsions after whooping-cough, and one status epilepticus.

External Agencies

The classification of these cases is shown below.

Accidents, car, etc....	10 cases	Birth injuries... ...	4 cases
Accidental poisoning	3 ,,	Alcohol	4 ,,
Suicides	10 ,,	Anaesthetics	9 ,,

The first class is of little pathological interest, the next—accidental poisoning—rather more so. One case, an old lady, took strong ammonia in mistake for liquid paraffin; one, a heroin addict, either got too little heroin or too much barbiturate, or both, and died of acute oedema of the lungs; while the third, probably with suicidal intent, took some dozen 7½-grain tablets of medinal. Of the suicides, nine used coal gas and one hanged himself. The birth injuries were in every case a small tentorial tear. One alcoholic case with a typical hobnailed liver died from the rupture of an oesophageal varix, the other three died at an earlier stage showing large fatty livers and very severe gastritis. A point of interest is that in two of these the cardiac end of the stomach was almost necrotic—so much so that I suspected an irritant poison, but was unable to find any sign of such.

The anaesthetic section is moderately representative. One case developed oedema of the glottis during the opening of a carbuncle of the neck under gas. Two had status lymphaticus, one, a male aged 28 years, had a 1⅛-oz. thymus and a 4½-oz. thyroid, and died during the removal of twelve septic teeth under gas-and-oxygen, while another, a female aged 15 years, had a 1½-oz. thymus but no other lymphatic enlargement, and died during a fifty-five-minute appendicectomy. General toxaemia accounted for two of these deaths—an old man of 70 with a huge surgical right kidney while under gas and oxygen for a cystoscopy, and a 3-year-old girl with a double empyema, who was given paraldehyde with ether. Finally, there were four who were unable to stand prolonged and severe surgical intervention—a fore-quarter amputation, a resection of the larynx, a prolonged forceps delivery in an elderly primipara, and an abdomino-perineal resection of the rectum.

Special Conditions

Another case of oedema of the glottis was one in which a man of 50 was taking a gargle for tonsillitis when he suddenly collapsed and died. There was very great oedema of the glottis and a submental abscess. Carcinoma accounted for four cases, and there was one case of spleno-medullary leukaemia. One known diabetic is included with the coronary disease cases. There was one case of Addison's disease, two of septicaemia, and one of diphtheria, to which the doctor was not called in until the child was moribund.

Conclusion

These, then, are the cases. Exactly what inferences should be drawn from them as a whole is not obvious, but the individual types at any rate are extremely interesting from the pathological, and possibly from the statistical, points of view.

I should like, in conclusion, to express my thanks to Mr. Ingleby Oddie for his kind permission to make use of this material.

During the eleven years of its existence the Ella Sachs Plotz Foundation has made 227 grants to investigators in different countries for researches directed towards the solution of various problems in medicine or surgery. Applications for grants for the year 1935–6 should be sent to Dr. Joseph C. Aub, Collis P. Huntington Memorial Hospital, 695, Huntington Avenue, Boston, U.S.A., before May 1st.

AN UNUSUAL CASE OF HEART-BLOCK

BY

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The following case appears to present certain features sufficiently unusual to justify publication.

CASE REPORT

The patient, an apparently healthy young woman of 31, suddenly came over giddy at about 9 p.m. on October 23rd, 1933; she flushed, felt sick, and then fell on the floor unconscious. She shortly recovered, but between 9 and 11 p.m. she had three similar faints. Dr. McGuire of Croydon was called, and found her apex beating at 28 a minute; he diagnosed complete heart-block, with Stokes-Adams syndrome. (I am indebted to Dr. McGuire for the particulars of onset.) The next day she was admitted to Croydon General Hospital, and was seen by me in the evening. Since 11 p.m. the previous day she had had no further attacks of faintness, and said that she now felt perfectly well. Her apex beat was regular at a rate of 30 a minute. Blood pressure, 120/78 mm. Hg. She was afebrile. The urine contained a very faint haze of albumin: otherwise physical examination was negative. Unfortunately it was not possible to take a graphic record that evening, but there appeared to be no doubt that the case was one of complete heart-block.

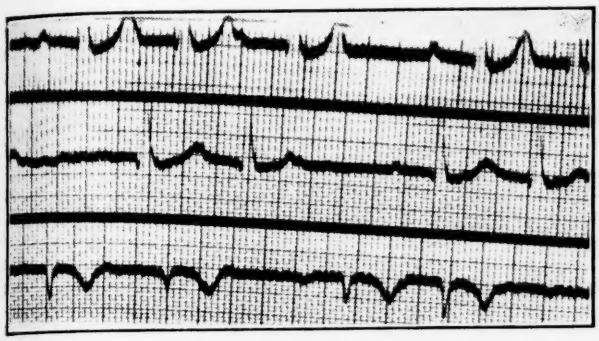

FIG. 1.

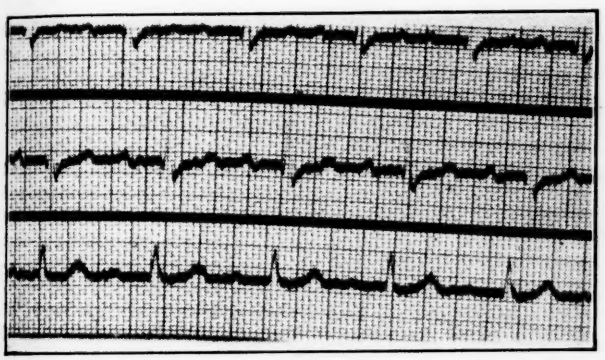

FIG. 2.

On the morning of October 26th the cardiac condition showed a marked change. The apex beat was now considerably faster (56), but irregularly irregular. An electrocardiogram (Fig. 1) demonstrated auriculo-ventricular asynchronism, with an irregular action of the ventricle. On October 28th the heart, to physical examination, seemed normal. The apex rate was 60 and regular. The electrocardiogram was now entirely different from that taken two days previously. The picture will be seen now to be that of a sinus bradycardia, but it will be noted that there is marked prolongation of the P–R interval to 0.28 second (Fig. 2). A third tracing, taken on November 4th, was very similar to the previous one, but the P–R interval was now only 0.22 second (Fig. 3). A fourth tracing, taken on November 11th, revealed a normal rhythm, with the P–R interval 0.12 second. Further tracings, on December 9th, 1933, and on June 2nd, 1934, showed the same (Fig. 4).

The patient was kept in bed for three weeks; no drugs of any kind were administered. She was then allowed to get up gradually, and after a week was discharged from hospital. Since that time she has been back at her work as a clerk, and has had no symptoms of any kind.

During her stay in hospital she was afebrile throughout, and never displayed any signs or symptoms suggestive of rheumatic infection. The Wassermann reaction was negative. Apart from the faint haze of albumin at the first examination the urine was normal.

COMMENT

It is to be regretted that no electrocardiographic examination was made until three days after the onset of symptoms, but there can be little doubt that this was a case of complete heart-block. The gradual recovery to the normal rhythm is seen in the subsequent electrocardiograms, and it is probable that the heart has recovered without any kind of impairment.

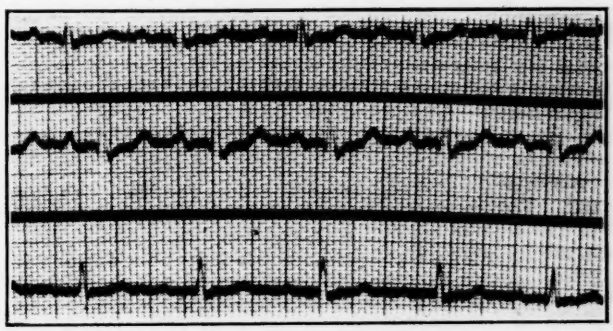

FIG. 3.

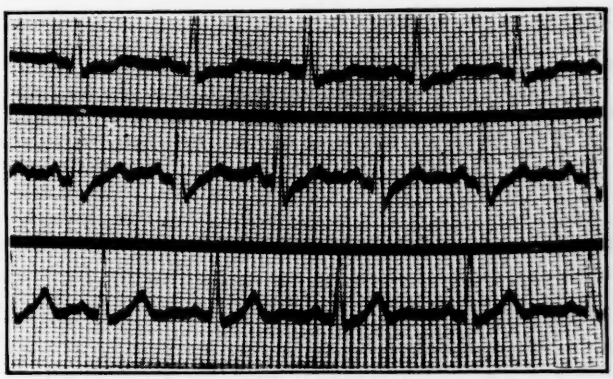

FIG. 4.

Transitory attacks of partial heart-block are not uncommon. Complete heart-block is nearly always associated with severe and permanent damage to the bundle. Moreover, so far as I have been able to ascertain from the literature, transitory heart-block has usually occurred in the course of a definite febrile illness—usually rheumatic. In this instance investigation failed to reveal any cause for the condition.

Dr. William Langran of Axminster was presented, on April 2nd, with a gold watch, a cheque, and an album containing 1,358 names of subscribers, on the occasion of his retirement after forty-nine years' practice in the district. He had been medical officer of health for the Axminster rural and urban district councils, and surgeon to the cottage hospital. Replying after the presentation, Dr. Langran commented on the growth of Axminster since 1886, when it had poor housing, no public hall, and no cottage hospital, parish or urban councils, district nurses, health visitors, or sanitary inspector.

Clinical Memoranda

Pregnancy Complicating Bilateral Renal Calculus

A pyelonephritis of pregnancy superimposed upon bilateral renal calculus presents an unusual clinical picture and also an unusual problem in emergency surgery.

A woman, aged 30, was admitted to Redhill County Hospital on January 31st, 1934, as a case of pyelitis of pregnancy. She was four months advanced in her first pregnancy, and her illness began four days prior to admission, with fever, rigors, and lumbar pain. Under routine medical treatment the pyrexia quickly subsided, and she was discharged to the care of her own doctor after a stay of fourteen days. It is recorded in her notes that on discharge her urine was free from albumin, but still contained some pus and *B. coli*.

Three weeks later the patient was readmitted on account of painless haematuria, which had started three days previously. She was referred to me for urological investigation. She was free from fever. The uterus was palpable above the symphysis pubis, and was of a consistency and size appropriate to the estimated duration of the pregnancy. The urine was port-wine-coloured from the admixed blood, and no chemical examination was possible. A cystoscopic examination revealed a considerable amount of blood clot in the bladder, which was normal. The ureteric orifices were normal. The efflux from the left ureter was bloody ; no efflux was seen from the right. Both ureters were catheterized, and almost pure blood was collected. *X*-ray examination demonstrated calculi in both kidneys, and pyelography indicated marked dilatation of both renal pelves. A very striking engorgement of all the vesical blood vessels was noted at the cystoscopic examination. This was explained when the blood pressure was taken, when it was found to be 260 mm. Hg.

Hysterotomy and Evacuation of Uterus

The state of affairs was now obvious. The addition of the element of sepsis in the pyelonephritis of pregnancy to the pre-existing condition of nephrolithiasis had resulted in a rapid failure of kidney function, and the degree of hyperpiesis indicated the severity of the renal failure. Immediate termination of the pregnancy became a matter of urgency. Abdominal hysterotomy and evacuation of the uterus was performed, and the Fallopian tubes were removed to prevent further pregnancies. Difficulty was anticipated in arresting the haemorrhage from the placental site on account of the high blood pressure, but an injection of 1 c.cm. pituitary extract into the uterine muscle caused strong uterine contraction and effectively controlled haemorrhage. The patient made an uneventful convalescence, and on discharge was asked to return later for treatment of the renal condition. The blood pressure fell to 170 mm. Hg a few days after the operation, and the haematuria also ceased.

Treatment of the Renal Condition

The patient was readmitted two months later. Investigation demonstrated a functionless right kidney and an efficiently functioning left, with a coloured efflux within four minutes of an indigo-carmine injection. The urine from the left kidney was sterile, while streptococci and *B. coli* were grown from a washout of the right pelvis. Van Slyke's test gave a renal efficiency of 40 per cent. The right kidney was explored by the usual lumbar route. It was replaced by a pyonephrotic sac, the cortex being non-existent. Nephrectomy was performed.

After a further period of two months the patient was again admitted for treatment of the left kidney. She was very well, and her left renal calculus gave her no trouble. Further *x*-ray examination showed that the left lower calix was occupied by a large stone surrounded by about a dozen smaller ones. The urine was sterile on culture, and contained no albumin. The blood urea was 31 mg. per 100 c.cm., and van Slyke's test gave a renal function of 49 per cent. normal. The left kidney was explored by the usual lumbar route. The cortex of the upper half was thickened and lobulated. The large calculus could be easily felt through the thinned cortex over the lower calix. With diathermy this thinned cortex was incised and the calculus removed. To ensure removal of all the small calculi the exposed kidney was *x*-rayed and any calculi located. For forty-eight hours after the operation the patient was very drowsy and only five ounces of urine were secreted, but thereafter her convalescence was quite uneventful.

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Haematocolpos and Bilateral Haematosalpynx due to Traumatic Stenosis of Vagina

Cases of haematocolpos due to persistence of a complete hymen are not uncommon, but reports of haematocolpos following labour are rare. It is probably not uncommon in the more backward areas of the world, where proper obstetrical and surgical help is difficult to obtain.

The patient, a married Chamar woman aged 25, came to the Main Hospital, Raipur, on November 3rd, 1934, complaining of pain and swelling in the left iliac region for the past eighteen months. She stated that about two years ago she was delivered of a stillborn male child. Labour was prolonged, and took place in her village many miles away. Since her confinement she had never menstruated, but every month when the period should begin she got acute lower abdominal pain ; the pain subsided after about a week. The swelling in the left iliac region had been gradually enlarging.

Examination of the abdomen showed a large cystic mass filling the left iliac region. Examination of the perineum revealed complete stenosis of the vagina, about one inch from the vaginal entrance, and a low recto-vaginal fistula. Aspiration was performed per vaginam, and old dark-brown blood withdrawn. The patient was very anaemic and run down, having been deserted by her husband for nearly two years. She was given food and tonics, and on November 17th, under spinal anaesthesia, the adhesions in the vagina were separated and the dark fluid evacuated. The cervix could not be located ; it appeared to have sloughed away. The vagina was packed with vaseline gauze. Later a dilator was inserted daily. As she was still very anaemic laparotomy was postponed to allow her to pick up.

On November 23rd her temperature began to rise, and malarial parasites were found in her blood. She was treated with quinine. Her temperature fell to normal. On December 4th she began to menstruate. The discharge was at first normal, but gradually got darker and thicker. She complained of abdominal discomfort. On December 6th her temperature began to rise, and early on December 7th signs of peritonitis were present. Owing to the reappearance of malarial parasites in her blood it was at first uncertain whether this was true peritonitis or a manifestation of malaria. As her pulse rate continued to increase it was decided to open her abdomen under spinal anaesthesia. The left Fallopian tube was found greatly distended and adherent to the anterior and lateral walls of the abdomen. It was removed. Old dark-brown blood was found filling the pelvic cavity around and behind the uterus, which was slightly enlarged and upright. On pulling the uterus forward it was found that the right tube was distended and embedded in a mass of adhesions in the pouch of Douglas. The dark-brown blood had burst out of the abdominal ostium of the tube. The patient's pulse had been bad, and now it failed, breathing stopped, and stimulants proved of no avail.

Both tubes contained what appeared to be old menstrual blood. It is presumed that after the exit from the vagina became occluded and the upper part completely filled with blood, so that it could hold no more, the menstrual blood was forced into the tubes. At first a little escaped by the abdominal ostia and formed adhesions which blocked the ostia. Subsequently the tubes dilated under pressure. It is curious that the right tube should have given way after the pressure in the vagina was released.

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B.A.O., I.M.S.,
Civil Surgeon, Raipur, C.P.

Reviews

OXYGEN AND CARBON DIOXIDE THERAPY

In writing a book on *Oxygen and Carbon Dioxide Therapy*,[1] Drs. ARGYLL CAMPBELL and E. P. POULTON have performed a useful and overdue service to their professional brethren. Although for well over a century oxygen therapy has been practised for various complaints, yet until quite recent years the element has been so administered as to be practically valueless. This fact is an interesting and timely warning against the widespread acceptance of any "proven" remedy.

After a concise chapter on historical details there follows an excellent section on physiological and pathological considerations in which various theoretical objections to oxygen therapy are soundly disposed of. Thus it is emphasized that although arterial blood is normally 95 per cent. saturated, yet an additional 5 per cent. resulting from oxygen inhalation is far from negligible. In the first place, such augmentation will increase the oxygen pressure in the tissues and venous blood 12½ per cent.: furthermore, the amount of oxygen dissolved in plasma is doubled with doubling of oxygen pressure in the inspired air. The validity of this therapy is thus based upon scientific facts. We are then led on to consideration of the value of O_2 and CO_2 in such conditions as carbon monoxide poisoning, oedema, and cyanosis. The sections on oedema and that dealing with the effect on cerebration of high altitudes are especially worthy of study.

The most important section of the work comes at the end, where the authors demonstrate the utter futility of such methods of oxygen administration as the tube and funnel, or the subcutaneous injection. Whilst having praise for double nasal tube application, they put in an eloquent and impressive plea for the use of the oxygen tent. An objection to its use, which we feel has been too lightly set aside, is the psychological effect on the patient. The utter isolation in what appears to be an alarming apparatus may terrify the young child and counterbalance the slight increase of oxygen absorption which the tent obtains over the nasal catheter. The treatment of various diseases is well dealt with, though marred perhaps by over-enthusiasm in relation to ulcerative colitis, the common cold, and whooping-cough. Little criticism can, however, be made of a book so packed with valuable and well-sifted information. It is a credit to the authors, and will be of genuine value to all members of the practising branches of our profession.

LUNACY PRACTICE

Written with the object of supplying solicitors and the legal profession with a simple guide to the present procedure in lunacy practice—that is, the practice under the Lunacy Acts of the Management and Administration Department at the Royal Courts of Justice, formerly known as the office of the Master in Lunacy—a book[2] recently issued will be helpful also to many medical practitioners. The authors, of whom one, Mr. G. GROSSMAN, is an official of the department, and the other, Mr. J. J. WONTNER, has written guides to various other branches of legal practice, allude to the fact that since the last practice books were issued all existing "Rules in Lunacy" have been annulled, and, with additions, have been for the most part reproduced in the "Management of Patients' Estates Rules," 1934, of which a copy is published in Appendix II to this work. The constitution and powers of the department, to which is assigned the task of managing and administering the property and income of persons who, through insanity, feeble-mindedness, mental infirmity caused by disease, or advanced age, are unable to manage their own affairs, are first briefly set out. In this chapter it is interesting to find that of the two ways of commencing proceedings—(1) by petition for an order for inquisition, and (2) by application under Section 116 of the Lunacy Act, 1890, for the appointment of a receiver—the former has become so rarely employed that there has only been one a year for the last three years, and that it is conceived that practically their only use is to conform to the requirements of the Irish courts, which recognize only "inquisition cases." The procedure on first application; the furnishing of the medical affidavit and medical certificate in "small cases" (where the patient's income is under £50 per annum and/or the capital is under £700); the practice in appointing a receiver; even the duties of the receiver; what happens on the death or recovery of the patient, are all matters of practical interest to medical men in connexion with mental patients. The text of the book occupies only 71 of the 151 pages, but its fifteen chapters give a clear and simple account of lunacy practice in this relation, so that, with the two appendices, which briefly give the relevant extracts from the Lunacy Act of 1890, and, secondly, the new "Management of Patients' Estates Rules," the medical man will not be at a loss for an answer in any case likely to fall within his experience.

For those who require a further and more detailed work on the same subject, and especially those called upon to advise in matters connected with the estates of persons under mental disability, the *Lunacy Practice*[3] of Mr. GERALD MILLS, assistant master of the Management and Administration Department, and Mr. RONALD POYSER, chief clerk of the same department, will be invaluable. Carefully indexed and fully documented—the appendices occupy no fewer than 327 pages—the book at once takes its place as the standard work on the subject. The duties of the department, which is responsible for the care and control of estates to the value of many millions of pounds, are intricate, varied, and greatly increasing in volume. Indeed, within the past ten years the number of estates under the care of the department has grown by approximately 100 per cent., and each succeeding year shows a substantial increase over its predecessor. This is no doubt due primarily to the increasing number of persons under mental disability; but also, as the authors believe, to the public recognition of the fact that the department alone has the requisite organization and machinery for ensuring that the property, however small, of persons under mental disability is applied in a manner best calculated to alleviate the suffering of the patient and to conserve his property in the event of his recovery. During recent years the departmental procedure has been simplified and rendered far less costly; and, as above noted, the additional rules now incorporated in the new "Management and Administration of Patients' Estates Rules" have altered the practice in several directions. The 1925 Trustee Act and the Mental Treatment Act of 1930 have both introduced certain changes and additions.

The patients over whose property the jurisdiction of the Management and Administration Department can be exercised are designated in Section 116 of the principal Act (1890), as extended, however, by the Lunacy Acts of 1891

[1] *Oxygen and Carbon Dioxide Therapy*. By Argyll Campbell, M.D., D.Sc., and E. P. Poulton, M.A., D.M., F.R.C.P. Foreword by Sir Leonard Hill, F.R.S. London: H. Milford, Oxford University Press. 1934. (Pp. 179; 49 figures. 12s. 6d. net.)

[2] *A Guide to Lunacy Practice, or the Practice of the Management and Administration Department of the High Court under the Lunacy Acts, 1890 to 1922*. By G. Grossman, B.A., Barrister-at-Law, and John J. Wontner. London: Sir Isaac Pitman and Sons, Ltd. 1934. (Pp. 151. 10s. 6d. net.)

[3] *Mills and Poyser's Lunacy Practice*. By Gerald E. Mills, O.B.E., Barrister-at-Law, and A. H. Ronald W. Poyser, B.A., Barrister-at-Law. London: Butterworth and Co., Ltd., and Shaw and Sons, Ltd. 1934. (Pp. 499. 42s. net.)

and 1908, by the Mental Deficiency Act, 1913, and by the Mental Treatment Act, 1930. Concerning these extensions Messrs. Mills and Poyser make the following useful observations. Section 116, Subsection (1) (*c*) applies "to every person lawfully detained as a lunatic though not so found by inquisition," and as extended, they remark, applies to every patient lawfully detained under the provisions of any Act of Parliament of this country, or sent to or placed in an institution or to or in a certified house, or placed under guardianship, in accordance with the provisions of the Mental Deficiency Acts. The jurisdiction to deal with the property of such a patient is established the moment that the patient is lawfully detained. This is important, because immediately upon the receipt of a certificate from the Board of Control to the effect that a patient is lawfully detained the Master is in a position, if he thinks it desirable, to make an order without requiring any medical certificate. Again, dealing with Section 116, Subsection (1) (*d*), which refers to persons not so detained and not so found by inquisition with regard to whom it is proved to the satisfaction of the Judge or Master that through mental infirmity or disease they are incapable of managing their affairs, they say that, as now interpreted, it "embraces patients who are known to be defectives within the meaning of the M.D. Acts, and voluntary patients admitted under Section 1 of the Mental Treatment Act, provided that medical evidence can be furnished that the patient is, through mental infirmity arising from disease or age, incapable of managing his own affairs." Lastly, it will be recalled that the Mental Treatment Act of 1930 by Section 5 (16) added a new Subsection (1) (*g*) to the 1890 Act, applying Section 116 "to every person received as a temporary patient." On this point the authors say that "although the jurisdiction is based on the mere fact that the patient has been admitted as a temporary patient for treatment under Section 5, the master almost invariably requires the usual medical evidence."

In the foregoing only one or two particular points of interest to all medical practitioners concerned with mentally disordered or defective persons in relation to the management and administration of their estates have been mentioned. The decision of Messrs. Mills and Poyser to publish a complete and up-to-date practice book, based on their thirty-nine and twenty-three years' experience respectively of lunacy administration, is more than justified in the result, for the work is lucid in exposition and comprehensive both in scope and in detail.

A SHORT PRACTICE OF SURGERY

Rather more than two years have gone by since *A Short Practice of Surgery*, by Messrs. Hamilton Bailey and McNeill Love, was first published, and now a second edition has been called for.[4] Although the interval between the two editions has been so short the authors have found it necessary to revise all the chapters and partially to rewrite some. They have been at particular pains to exclude those time-honoured shibboleths of the kind which, regularly copied from textbook to textbook during the past hundred years, are now recognized as having no application in the practice of surgery. The authors express their confirmed belief in the value of illustrations in order to lighten and shorten the text, and they have included over a hundred new figures in this edition.

The whole field of practical surgery, so far as the essentials are concerned, is covered in this book. The teaching is thoroughly up to date, and includes such modern methods as the technique for reducing fractures under local anaesthesia. The last chapter is one dealing with infections of the hand and, as the authors state, is not the least in importance. They say that infections of the hand are still but improperly understood, and as a result, on the whole, badly treated. The advice they set forth should help to minimize this reproach in the future.

The book has now been issued in a single volume, which, besides making for greater popularity among readers, has permitted publication at an appreciably lower price. As compared with the lot of previous generations the student at the present day has such a bewildering choice of really first-class textbooks of surgery that he must find selecting one quite embarrassing. We can with confidence recommend this book to his notice. It contains everything he will want to know in order to satisfy the examiners in a qualifying examination, right up to date and without a word of unnecessary padding. It is beautifully printed on excellent paper, the illustrations are numerous and really helpful, the reproductions of skiagrams and photographs are a treat to behold. The book is of a handy size, a comfortable weight, and is in a really handsome binding. It has an excellent index.

POSTURE IN PARTURITION

The object of Dr. Julius Jarcho, in his book with the alliterative title of *Postures and Practices during Labor among Primitive Peoples*,[5] is to illustrate the essential similarity of the positions assumed by parturient women of diverse races in widely separated parts of the world, and to extract therefrom any lessons that may be of use to obstetricians. He has, moreover, gone further into the anthropological aspect than his main title suggests, by including chapters on "Customs and Taboos" and on "Cruelties in Labour," so as to indicate the consequences both of superstition and of violent methods in the conduct of labour. Thus magic and ancient obstetrical procedures, such as Hippocratic succussion, are still represented in the practices at childbirth among aboriginal and semi-civilized races. He also enters the general biological field, by devoting a chapter to "Postures and Practices in the Primates."

Although the contrast is clearly brought out between the attitude of mind in which labour is faced by primitive and by civilized women, the author does not seem to appreciate the difficulties in translating from the former to the latter any part of the practice, however much it may be paraphrased. The postures of primitive womankind are obviously incompatible with relief by anaesthetics or analgesics; the civilized woman, with knowledge and experience of all that medical science can do for her, has very different expectations of the services her attendants can give, and the assumption of unwonted positions produces a degree of distress and early fatigue that defeats the object in view. It would have been more appropriate to his purpose had Dr. Jarcho devoted his final chapter to ante-partum physical training rather than "Post-partum Gymnastics," and taken the opportunity to indicate how the expectant mother might thus be better prepared to meet the unaccustomed postures and muscular efforts he suggests. Although but distantly related to his objective, the last chapter provides an excellent account of the bed exercises in common use for puerperal women, with line diagrams that clearly explain the manner in which they are carried out.

The book is profusely illustrated, and contains an extensive bibliography on an aspect of obstetrics that may merit

[4] *A Short Practice of Surgery*. By Hamilton Bailey, F.R.C.S., and R. J. McNeill Love, M.S., F.R.C.S. Second edition. London: H. K. Lewis and Co., Ltd. 1935. (Pp. viii + 988; 731 figures, 83 coloured. 30s. net.)

[5] *Postures and Practices during Labor among Primitive Peoples. Adaptations to Modern Obstetrics*. By Julius Jarcho, M.D., F.A.C.S. New York: Paul B. Hoeber, Inc. 1934. (Pp. 175; 130 figures. 3.50 dollars.)

closer study than it has yet received, but we doubt if Dr. Jarcho's adventure will encourage others to explore further into this field. He has made an interesting collection of ethnological curiosities concerning midwifery practices, but too many of them are irrelevant to his declared purpose, thereby covering up his track and rendering it more difficult for others to follow.

BIOCHEMISTRY OF THE EYE

In his book *The Biochemistry of the Eye*[6] Dr. ARLINGTON C. KRAUSE, instructor in ophthalmology at the Johns Hopkins Medical School, describes in turn the chemistry of all the different tissues of the eye, with references to the physiology, anatomy, pathology, and immunology, so far as they are known. Besides mentioning research work on the human eye, the author discusses the subject also from the point of view of comparative medicine. Particularly interesting are those parts of the book in which he deals with the permeability and metabolism of the ocular tissues, the pathology of the vitreous humour and cataract, the controversy over the source of the aqueous humour, and the explanation of Donnan's equilibrium. It would have been appropriate, we think, to include a special chapter dealing with modern views on the theory of glaucoma, the development of which is probably dependent on changes in ocular biochemistry.

Many readers will be surprised to learn how much research work has been done on the biochemistry of the eye, not only by the author himself—he has, in fact, contributed a great deal—but also by others. The interest seems to be quite universal, as is shown by the references to the literature, which amount to nearly 1,000. So large a number gives some indication of the importance of this subject, and we note with interest the author's dictum that "the basis of normal and abnormal physiology of the eye is chemistry and physics, and, furthermore, the physiology of the eye is the foundation for the theoretical conceptions of medical and surgical ophthalmology."

It is difficult to imagine any future work on the biochemistry of the eye being done without first consulting this publication: it is both a reference book of high standard and something to be welcomed by all who take special interest in the subject.

Notes on Books

Professor MAX THOREK'S *Surgical Errors and Safeguards*[7] was noticed very favourably in these columns on its appearance in 1932. Except for the first chapter, dealing with surgical operations in general, the book is arranged on a regional basis, and covers the whole field in so far as it concerns the general surgeon and the gynaecologist. A second edition has now been published, and in its preparation the author has made such additions and corrections of the text as recent literature and experience have called for. Professor Arthur Dean Bevan says in his foreword: "This volume should be a welcome addition to the library of every progressive surgeon and advanced medical student."

Under the title of The Paediatric Year[8] and prefaced by Professor Robert Debré a new edition to the series of annuals issued by Masson and Co. has been prepared by Drs. R. Broca and J. Marie. Essentially the book consists of seventeen critical reviews of diseases and medical topics concerning children which are under discussion at the present time. Pink disease, nephrosis, acute ethmoiditis, and modern methods in the prevention of measles are some of the subjects dealt with. It is a weakness of the volume that only French paediatrics are included in the survey, but within this limitation the work is well done, and perhaps in succeeding years a wider field will be covered.

Two recent numbers of *Tabulae Biologicae Periodicae*[9] (vol. iv, Nos. 2 and 3) contain information about a wide range of subjects. Nearly half the space is devoted to anthropological data relating first to blood groups and secondly to skull measurements. General physiology is represented by an article on the kidneys, in which the author has collected not only data regarding functional activity but also morphological data showing such facts as the numbers of glomeruli in different species, the total areas of glomeruli and tubules, etc. A set of tables which shows synoptically the content of the less common elements of various tissues of man and animals deserves special mention, as the author has collected a large amount of out-of-the way information. Particulars of twenty elements are given; the references number 110, and the great majority of these are subsequent to 1925. The convenience of such tables for reference work is obvious. An article on toxicology gives data concerning the action of poisonous gases, both those used in warfare and those occurring in industry.

The current issue of the *Municipal Year Book and Encyclopaedia of Local Government Administration*[10] is a large volume of 1644 pages, and the number of separate sections has been increased from forty-five to forty-eight. The Minister of Health again contributes a preface, and the Minister of Transport a foreword to the Roads and Transport Section. Not only does this *Year Book* contain a large amount of information about every local authority in the British Isles, but in almost all cases it gives a complete list of members and officials of these authorities. Moreover, cross references are given to the principal statutory provisions and legal decisions of 1934 as they affect each type of authority. Among the new matter included in the 1935 edition are the names and addresses of public analysts in England and Wales, and the names and addresses of coroners. This is one of the most complete and accurate reference books with which we are acquainted.

Those who are occasionally concerned with the facts of comparative medicine and with animal management will find in the second edition of *Black's Veterinary Dictionary*,[11] edited by WILLIAM C. MILLER, an extremely useful and interesting work of reference. From the higher scientific point of view, though absolutely sound and sometimes surprisingly advanced, it is admittedly an elementary publication; like many other veterinary works of a semi-popular nature it is necessarily written with one eye on the technical student and the other on the lay owner of animals. The Editor, who is now Courtauld Professor of Animal Husbandry in the Veterinary College, London, was formerly on the teaching staff of Edinburgh University in veterinary and zootechnical subjects, and has chosen as his collaborators a large number of Scottish scientific workers—twelve out of fourteen: this fact may have something to do with the precision and caution which distinguish his dictionary. Few young men or women about to embark on a pastoral career at home or over-seas fail to acquire a veterinary *vade mecum*, and here is as good a book for them, and as safe a book for the animals, as could be found; in these respects at least we have seen none of its kind to compare with it.

[6] *The Biochemistry of the Eye*. By Arlington C. Krause, M.A., Ph.D., M.D., F.A.I.C. Baltimore: The Johns Hopkins Press; London: H. Milford, Oxford University Press. 1934. (Pp. 264; 17 figures. 3.25 dollars, or 15s. net.)

[7] *Surgical Errors and Safeguards*. By Max Thorek, M.D., Second revised edition. Philadelphia and London: J. B. Lippincott Company. 1935. (Pp. 696; 668 figures (many coloured). 45s. net.)

[8] *L'Année Pédiatrique*. By Robert Broca and Julien Marie. Première Année. Paris: Masson et Cie. 1934. (Pp. 168; 46 figures. 25 fr.)

[9] Berlin: W. Junk. 1935. (M. 55 for single volumes; M. 48 for subscribers to whole work.)

[10] *The Municipal Year Book, 1935*. Edited by James Forbes. London: The Municipal Journal Ltd. (30s. net.)

[11] *Black's Veterinary Dictionary*. Edited by William C. Miller, M.R.C.V.S., F.R.S.Ed. With contributions by various authorities. Second edition. London: A. and C. Black, Ltd. 1935. (Pp. 1,141; 326 figures; 8 plates. 21s. net.)

HEALTH OF THE ROYAL NAVY

REPORT FOR 1933

The report on the health of the Navy for 1933[1] comprises the three usual main sections—namely, a general summary of statistical information ; remarks on certain diseases and items of local interest ; and articles on hygiene, pathology, surgery, medicine, and dentistry. Changes in nomenclature include the substitution of the term " catarrh " by " bronchial catarrh " and " common cold " ; the addition of two headings, " Diseases of the Breast " and " Diseases Caused by Metazoan Parasites " ; and the combination of " Diseases of the Blood and Spleen " and " Diseases of the Lymphatic System " under the single heading " Diseases of the Blood and Blood-forming Organs."

INCIDENCE OF DISEASE

The returns for the total Force show an increase in the incidence of disease compared with the previous year and also with the previous five years' average. The total number of cases of disease and injury was 41,852. On the other hand, the average number of sick daily was less than in 1932 and below the five years' average. There was a similar decrease in the total number of days' sickness in hospital and on board. The total number invalided was 1,172, which gives a ratio of 14.09 per 1,000, being 2.11 below the 1932 ratio and 2.19 below the five years' average. This number includes men temporarily invalided from foreign stations, many of whom were able to rejoin the Force. The number finally invalided was 833. In comparisoa with the five years' average the ratios per 1,000 of the total Force invalided have decreased as follows: on the Home Station by 3.69 ; in the Home Fleet by 2.33 ; on the Mediterranean Station by 2.14 ; on the Africa Station by 0.61 ; on the Irregular List by 0.97 ; and in the Royal Marines at Headquarters by 0.5. Increases were shown on the America and West Indies Station of 0.54, on the China Station of 0.12, and on the East Indies Station of 1.47.

DYSENTERY, INFLUENZA, MALARIA

There were forty-two fresh cases of amoebic dysentery, twenty-one being returned from one ship serving on the America and West Indies Station. The patients were treated with concentrated magnesium sulphate, 1 drachm in 2 drachms of water every hour until the pain had ceased, and 4 grains of stovarsol twice daily. The symptoms cleared up in about four days, but the stovarsol was continued, in order to kill the cysts. This treatment was adopted in preference to the emetine treatment, and proved so successful that it was found unnecessary to try yatren. The source of infection was believed to be some food or drink obtained ashore, for the ship's food and water supplies proved to be healthy. One case of bacillary dysentery presented the uncommon complication of polyarthritis during convalescence.

Influenza showed a wide difference in incidence, there being 3,770 cases in 1933 as compared with 792 recorded in 1932. This wide discrepancy is explained by the change in nomenclature already mentioned, many cases reported as " epidemic catarrh " having been finally classified as influenza. The disease, on the whole, ran a mild course, but there appear to have been a larger number of cases with complications than in 1932. A fairly large number of cases of post-influenzal debility were noted, and in two instances a second attack followed closely on the first, and was of greater severity. The epidemics were of short duration, but involved large numbers, the period of maximum intensity being the latter half of January. In one ship, where the epidemic lasted just a fortnight and 161 cases occurred, a common complaint was loss of the use of the legs. The length of the attack averaged four to five days.

Malaria showed a marked reduction in the incidence of cases, the number being 210 as compared with 255 in the previous year. There were two deaths, one following the accidental rupture of a very large spleen, which had not been suspected, the other from a subtertian infection. Only sixty-five cases were reported from the China Station, as compared with 100 in 1932. The East Indies Station showed an increase, but the incidence (50) still compared very favourably with the 1929 record of 200 cases. In one ship, stationed on the west coast of Africa in the highly infected area of the Niger Delta, very beneficial effects were derived from substituting red electric light bulbs for white ones, thus reducing the swarm of insects, which were unattracted by the former.

SPECIAL DEPARTMENTS

The Plymouth water supply still continues to show occasional evidence of contamination, probably by seagulls. It has been demonstrated that the excrement from these birds, in areas in which sea-water is contaminated with sewage, may contain *B. typhosus*. Automatic chlorinators were installed during the year in various places ; in Malta these have been placed at sources of water supply, and consequently it has been found no longer necessary to continue rechlorination at the Admiralty reservoirs. In Malta the incidence of undulant fever in the civil population continues to rise, and sixteen cases occurred in naval ratings. Experiments are being made in the immunization of goats, but it is hoped that wholesale pasteurization of milk will be instituted in the near future.

In a comparison at Plymouth of the Wassermann and Kahn tests, on 1,374 blood samples, there were fifty-four definite disagreements and two doubtful cases. The McIntosh and Fildes technique seems to have given periodically, in that laboratory, some apparently non-specific reactions, and as many blood samples as possible have been also tested by Wyler's modification of the Medical Research Council No. 1 method, but at present with inconclusive results. At Malta the Kahn method was found to be very reliable, and was exclusively used during the summer months. It was found to be slower to become positive and slower to become negative, and, on the whole, was considered to be more trustworthy than the Wassermann test. Both procedures are employed in doubtful cases for diagnosis, and as a test of cure. In the Royal Naval Hospital at Plymouth Valentine's direct-staining method for pneumococcal typing was found successful. From Malta were recorded one case of septicaemia due to *Oïdium albicans*, in which recovery followed tonsillectomy, and one case of a perforated duodenal ulcer, in which an abscess at the site of perforation contained the body of an Italian bee.

At Chatham the use of methylated spirit for sterilization of the skin reported in the two previous years has continued to give satisfactory results, no case of sepsis having occurred. For grossly infected cases the use of Bonney's solution (a mixture of rectified spirit and 1 per cent. aqueous solutions of brilliant green and crystal violet) has proved valuable. Cellona plaster-of-Paris bandages have also been favourably reported on by the surgical specialist at Chatham, the chief advantage being that the plaster becomes firm in about five minutes, and is therefore most useful in setting fractures under an anaesthetic where control of the part is required before the patient comes round. At this station McBurney's muscle-splitting operation is the method of choice for appendicitis. No case of incisional hernia has been noted as a sequel, though one such hernia followed the use of the transverse incision. At Haslar the transverse incision was employed in nearly all cases, it being considered that a better exposure is obtained thus, and less damage is caused to the internal oblique muscle. The surgical specialist at Malta comments on the surprising incidence of acute abdominal disease in the Service, and adds that dietetic experiments might be worth trying. In the report for 1931 Surgeon Captain Burdett suggested that the enormous diminution of physical effort which had come about during the last twenty years had a direct bearing on this subject. At Haslar the infra-red apparatus has given great relief in several post-operative cases, chiefly abdominal, and application has been made for a second machine. Ultra-violet radiation, preceded by infra-red therapy, gave marked improvement in certain skin cases and in slow-healing ulcers and wounds.

Four cases of poisoning by carbon tetrachloride from the use of fire extinguishers are reported from Chatham. Undulant fever has been treated by protein shock in Malta with most effect in long-standing cases, and definitely less in recent ones, though it does appear to shorten the duration of the illness and to control sweating. The medical specialist in Malta considers that this treatment should be tried in every case.

[1] *Statistical Report of the Health of the Navy for the Year 1933.* London: H.M. Stationery Office. 1935. (2s. 6d. net.)

HEALTH OF SCOTLAND*

DEPARTMENT'S ANNUAL REPORT

INFECTIOUS DISEASES

More than 130,000 persons suffered from infectious diseases in Scotland during 1934, an increase of 25,000 over the figure for the previous year. The death rate from tuberculosis was 75 per 100,000, the lowest recorded. Diphtheria provided 12,275 notifications with 583 deaths, these figures being the highest recorded for thirty-six years, and the suggestion is made that local authorities in areas where the disease has assumed serious proportions might consider schemes of immunization such as had proved successful in Edinburgh and Aberdeen. There were 37,492 notifications of measles with 1,014 deaths, the highest number recorded in the past five years. Scarlet fever, which has shown an unusually high prevalence during the last three years, provided 33,338 notifications, which were, however, some 5,000 fewer than in 1933, and although the disease was generally of a mild form there were 345 deaths.

HOSPITAL SERVICES

Local authority hospitals totalled 243 and voluntary hospitals 206; these figures are exclusive of institutions for lunatics and mental defectives. In these 449 hospitals there were approximately 31,250 beds, of which 18,670 were in local authority and 12,580 in voluntary hospitals. The 243 local authority institutions included 179 special hospitals for infectious diseases, maternity cases, infants and children, etc., with 11,520 beds, and five general hospitals with 1,580 beds, which were available for sick persons generally. The 206 voluntary hospitals had 7,000 beds for general medical and surgical work, 1,400 for convalescence, 1,100 for children, 700 for incurables, 700 for tuberculosis, 500 for maternity, and 1,175 for other purposes. The Department is doing all that is possible to raise the standard of institutional treatment of the sick poor to the accepted general hospital standard; to secure co-operation between local authorities of adjacent areas for the development of a few chosen institutions instead of any definite continuance of a large number of small units; and to foster co-operation between statutory and voluntary hospital authorities. Attention is drawn to an important advance in the field of orthopaedics in the south-eastern region; an arrangement has been made whereby Edinburgh Corporation for an experimental period will send orthopaedic patients from the city, up to a total cost of £500 per annum, to the Princess Margaret Rose Hospital at Fairmilehead, while other authorities in the region are making similar arrangements. In the Highlands and Islands, an area representing more than half the surface of Scotland, with a population amounting to only one-seventeenth of the whole, plans are made to subsidize medical practitioners from a special grant. The number of medical practices to which this applied last year was 152, and the expenditure from the fund was £79,400. Six surgical specialists were maintained at different centres, and there have been growing demands for this service, so that the general hospitals at Lerwick, Kirkwall, and Stornoway have been found to require additional accommodation. The air ambulance for transport of urgent cases from the islands to hospital in Glasgow and elsewhere has been working well. Nurses in this area now number 197, the majority being registered, and all of them are certified midwives. For attendance over the wide areas motor vehicles have been supplied, and are in regular use by about 50 per cent. of the nurses.

NATIONAL HEALTH INSURANCE

The national health insurance scheme covers 1,900,000 of the population of Scotland, embracing 54 per cent. of the male and 26 per cent. of the female population. During the year £2,600,000 was paid in national health insurance contributions by insured persons and their employers, and a further £1,100,000 was derived from interest and State contributions. Medical benefit involved the disbursement of £1,000,000, including £170,000 for medicines, etc., and money payments to the insured totalled £1,628,000 with a further £192,000 for maternity benefit. Additional benefits afforded by certain societies in the way of dental, ophthalmic, and hospital treatment, medical appliances, etc., accounted for £312,000, and the cost of administration was £587,000. Of the insured population, 99 per cent. obtained benefits through approved societies, and during the year there were 183 societies approved for operation in Scotland. An experiment which had been carried out in the city of Dundee reached the end of its trial period of two years; this was a service of sick visitors maintained by a committee representing the various approved societies in the city. Three whole-time sick visitors were employed to visit every claimant for benefit for the purpose of detecting and eliminating unsatisfactory claimants. The approved societies concerned unanimously decided that the experiment should be continued permanently. It had covered about 40,000 insured persons at a cost of 3d. per person per annum to the societies, and the Department recommends that a similar practice should be adopted in other areas. A continued decline is noted in the number of cases referred to the regional medical officers, the figure of 44,870 in 1934 being 8,000 less than the figure for 1933, which showed a similar diminution from that of 1932. The assistance of insurance practitioners has been invoked in clinical research on the effects of valvular disease of the heart with special reference to treatment in general practice. This inquiry is still proceeding, and it is noted that the returns submitted by practitioners show care in compilation, although in a few cases apparent want of interest rendered the return valueless. The inquiry will be concluded during the coming year.

POOR LAW

Two measures which together effected the greatest change in the Poor Law since 1845 were passed during 1934: the Unemployment Act and the Poor Law (Scotland) Act. Under these, local authorities, while prohibited from granting relief, except relief in kind, to persons whose needs are considered by the Unemployment Assistance Board, remain responsible for the medical needs of the poor, whether their other needs are met by this board or not. The number of sane poor in receipt of relief in May, 1934, was 406,351, or 8.2 per cent. of the estimated population. This number included over 72,000 able-bodied unemployed, with 142,000 dependants. There were also over 20,000 pauper lunatics and mental defectives, including 2,625 maintained in private dwellings. The expenditure of local authorities on poor relief for the year to May, 1934, amounted to £7,067,567, including £2,167,306 for the able-bodied unemployed. The corresponding total expenditure in 1931 was £766,355. With regard to domiciliary medical service for the sick poor, the report points out that since the duties of parish councils were taken over by the public health administration of local authorities, the previous medical arrangements generally still obtain. In some areas, however, medical officers of health have undertaken the duties, while in others the service is now provided by a panel open to all local practitioners remunerated on a capitation basis. In Aberdeen county a scheme has been in operation for over a year enabling all practitioners to participate in the Poor Law medical service at agreed salaries; this scheme, which was not more costly than the old one, is stated to work well. The Department considers that the question whether local practitioners engaged in this service should be paid on a capitation basis or otherwise, seems one which can best be settled by the circumstances of each area, while remuneration ought to be related to the amount of service.

* The first part of this notice of the Annual Report of the Department of Health for Scotland appeared last week on page 770.

British Medical Journal

SATURDAY, APRIL 20th, 1935

THE OSTEOPATHS BILL

It may now be assumed that the Bill for the Registration of Osteopaths will not survive the report stage in the House of Lords. The only matter which really remains in some doubt is whether any steps will be taken to recommend or to establish some further inquiry into osteopathic theory and practice. It is to be hoped that the Select Committee will be content to follow the simple course of reporting that the Bill should not be proceeded with. If, thereafter, the Minister of Health, or the Lord President of the Council, or the Government think fit, in their discretion, to take any further steps in appointing any commission or committee for additional inquiry, they will have to accept the consequences of what is almost certain to prove a waste of public money and of much valuable time. It was, of course, not unreasonable for the Ministry of Health to state through its secretary, Sir Arthur Robinson, that before any State Register of Osteopaths was set up there should be an inquiry into the validity of osteopathic theory, and for the President of the General Medical Council to say that he would offer no objection to that suggestion ; but that is quite different from a proposal that any such inquiry should be set up at the present time, or even in the early future. The present exposure—for it can be called nothing less—should be sufficient for the time. When the reputable osteopaths have established an osteopathic school in this country with even a semblance of efficiency, have associated therewith a hospital (not merely an out-patient clinic) of reasonable size, have passed a number of students through their full course at such school or hospital, and have satisfied some scientific body that they have some prima facie evidence which can be submitted for examination, then, and then only, there may be a case for further or official action on behalf of the community.

Meanwhile, the inquiry just concluded, though it has occupied many days and cost great sums of money, has probably served some useful purpose. It has possibly educated, as well as confused, the non-medical members of the Select Committee itself in respect of matters with which most of them could not be expected to be familiar. Though it early became evident that neither the introducer of the Bill nor its promoters were capable of framing a definition of osteopathy which would distinguish it from healing arts or cults of other kinds, and though the word was used throughout with a variety of connotations, certain things which were not till then fully appreciated must have become clear to those who heard the evidence and to those who have read either the official minutes of the proceedings or the relatively full reports which have been given in the *Journal* from week to week. The extent of the claims of osteopaths is no longer in any doubt. They claim that their art covers the whole field of medicine, and is applicable to morbid conditions of all kinds, general as well as local, acute as well as chronic, medical as well as surgical. They base it upon a pathology and a theory of causation which is equally ubiquitous and pervasive. The one universal cause, either predisposing or exciting, is the "osteopathic spinal lesion." Other causes may be associated with it in some cases, but it is always there, they say, influencing the incidence and the course of disease. Though, for the purpose of this Bill, they were willing to accept certain limitations on their field of work, and though they would stress one particular form of treatment (spinal manipulation) above all others, they claim the right to use any other forms available, including surgery of all degrees and drugs of many varieties. Their art and practice are not to be confounded with or limited to manipulative surgery, still less to such work as is commonly done by "bone-setters." Their sphere is preventive as well as curative, for the treatment of the spinal lesion by manipulation would limit the spread of infective disease and minimize the liability to such conditions as sepsis and eclampsia. With all this they are to be content, not merely for the present, but hereafter also, with a training which is manifestly inferior to the ordinary course of medical education.

Two other points of a different character, but of decisive importance, have been brought out. The legal position as to the practice of healing is radically different in this country from that which exists in the United States of America. There, all such practice is forbidden except to those who are registered: here, with a very few minor exceptions, it is open to anybody. In America, therefore, registration and regulation are necessary to enable people to choose whatever kind of attention they desire ; here there is no such necessity. In this country the State, while allowing this liberty, has established a single *Medical Register*, mainly to prescribe a minimum standard for practitioners who may properly have certain duties imposed upon them and be used by the State officially for the advantage of public health. It follows from this system that the consequences of State recognition of more than one register would give an authoritative *cachet* to perhaps inconsistent theories and practices, and must lead to a very difficult, almost impossible, position in public health administration.

The public should now begin to understand these claims, to appreciate the absence of any scientific evidence in support of them, and to realize the nature of the legal revolution and the chaos in administration that any State recognition of osteopaths must necessarily produce. After the cross-examination of the witnesses for the Bill and in particular the devastating cross-examination of Dr. Littlejohn by the British Medical Association's counsel, Sir William Jowitt, and the no less devastating evidence on the scientific side of Sir

Farquhar Buzzard, Mr. Elmslie, Sir Henry Dale and others, and on the legal and administrative side by Sir Henry Brackenbury (supported as this was, on the same lines, by the evidence given on behalf of the Ministry of Health), it is to be hoped that less may be heard of these claims for some time to come, or at least that they may become more modest and more reasonable. Sporadic successes within a limited sphere, of course, prove nothing as regards any system of treatment, and mere reiteration of belief is not evidence.

MATERNITY SERVICES

Few people in this country can possess so complete a knowledge of the general question of the organization of maternity work as Dame Janet Campbell, whose pamphlet on Maternity Services has lately appeared.[1] Her long experience as senior medical officer for maternity and child welfare work to the Ministry of Health has not only given her an intimate knowledge of administration, but (as we now know) has led her to formulate definite views on the requirements of the much-discussed situation which obtains to-day. Being now free from the bonds of official responsibility she is able to give the public the benefit of the conclusions which have emerged in her mind—conclusions worthy of the close attention of all who are interested in the subject.

The author recognizes that the idea of an organized maternity service is now generally accepted, but she doubts whether any of the schemes hitherto advanced would achieve the full results that are desired. The objection stated is that these schemes are "based on the services of all doctors and all midwives," whereas there is little likelihood of rapid progress unless "a selected corps of workers" can be drawn into the scheme. The author believes that the greatest contribution to the problem of maternal mortality would be made by "insistence on post-graduate training, special study, and experience" from all medical practitioners who "intend to make midwifery an integral part of their practice." This proposal raises many grave considerations if "insistence" is to be made really effective. The necessary legislation would in effect restrict members of the medical profession in the exercise of their statutory right to practise medicine in all its branches. It would arouse strenuous opposition and might well prove unacceptable to Parliament. Probably no such restriction would be practicable unless midwifery is entirely withdrawn from the competence of the practitioner as such and entrusted to a State service of specialists.

There are two points upon which Dame Janet Campbell thinks attention should be specially concentrated: first, the adequate provision of hospital beds for all women whose homes are unsuitable, and for complicated cases; second, the necessity of raising the standard of domiciliary midwifery. Her views in regard to the latter closely correspond with the proposals of the Joint Council of Midwifery for the establishment of a salaried service of midwives.[2] With regard to maternity work in hospital the following points are emphasized: (1) there must be no overcrowding, and to avoid it patients should be accepted only up to 80 per cent. of the total bed capacity; (2) "clean" and "booked" cases should be treated separately from "emergency" cases; (3) abortions should not be admitted to maternity wards; (4) responsibility for all treatment should be in the hands of a specialist. To these requirements the courageous statement is added that "there is no more dangerous place for a maternity patient than an institution which is inadequate in any particular." With regard to improved training for midwives, the plan advocated is a two-year course in midwifery based upon one or two years' training in general nursing. A corollary to this plan is the establishment of a whole-time service: "it is scarcely possible to have one without the other." The author is to be congratulated on an informative and suggestive contribution, which should do much to clarify views on the measures that are needed to reform our maternity services.

[1] *Maternity Services.* By Dame Janet Campbell. Faber and Faber. (1s. net.)

MEDICO-LEGAL SCIENCE

On Wednesday, April 10th, the Home Secretary, Sir John Gilmour, formally opened the laboratory for the scientific investigation of crime which has just been built at the Metropolitan Police College, Hendon; and among those beside him on the platform were Lord Dawson of Penn (President of the Royal College of Physicians), Lord Horder, Mr. Hugh Lett (representing the President of the Royal College of Surgeons), and Sir Bernard Spilsbury. Lord Atkin, in congratulating Lord Trenchard (Commissioner of Police of the Metropolis) on this new enterprise, took the occasion to make one more eloquent plea for the creation of a central medico-legal institute for teaching and research as part of the University of London. He welcomed the police laboratory as a real addition to the resources of civilization, and declared that the setting up in close touch with it of an institute of forensic medicine with a professor at its head would give the necessary academic stamp to a very promising movement. In this matter England has lagged terribly behind Scotland and almost every other civilized country in the world. Lord Dawson, speaking on behalf of the medical profession, commended the project now taking shape at Hendon; in this work, he said, medicine and the law were entirely at one. Before the proceedings closed the Home Secretary made the welcome announcement that he was appointing a committee of experts to advise him as to the manner in which the Metropolitan Police Laboratory might best be developed in the national interest. Its membership is as follows: Lord Atkin, Lord Dawson, Lord Trenchard, Sir Russell Scott (Permanent Under-Secretary of State, Home Office), Sir Edwin Deller (Principal of the University of London), Sir Bernard Spilsbury, Sir Frank Smith

[2] *British Medical Journal*, February 23rd, 1935, p. 371.

(Secretary, Department of Scientific and Industrial Research), Sir Robert Robertson (Government chemist), and Mr. Hugh Lett. The laboratory is in charge of Dr. James Davidson, lately senior pathologist to the Edinburgh Royal Infirmary and lecturer on morbid anatomy in the University of Edinburgh, who for some time past has assisted Professor Sydney Smith in the forensic medicine department of that university. We believe, with Lord Atkin, that Wednesday of last week was "a great day for medico-legal science," and echo his hope that it will prove to have been the first step towards the speedy establishment of an institute of forensic medicine worthy of the greatest city in the world.

INTERNATIONAL OPHTHALMOLOGY

On the occasion of its annual congress the Council of the Ophthalmological Society invited the International Organization of the Campaign against Trachoma and the International Association for the Prevention of Blindness to hold their annual meetings in London. The invitation was gratefully accepted by the sister societies, offspring of the International Council of Ophthalmology. The International Organization of the Campaign against Trachoma held its first meeting on April 3rd, when Professor de Grosz (Holland) announced his resignation of the office of president. He has occupied the post most admirably since the foundation of the Organization in 1929. He has been succeeded as president by Mr. A. F. MacCallan (Great Britain), while Dr. F. Wibaut (Holland) remains as secretary-general. At the scientific meeting on April 3rd the subject for discussion was "The Social and Legal Measures to be taken against Trachoma." After an introductory paper by Mr. MacCallan, reports of very great interest were read by Dr. Josephus Jitta (League of Nations), Dr. Tewfik (Egypt), Professor Miyashita (Japan), and Dr. Zachert (Poland). The International Association for the Prevention of Blindness met on April 5th. Everyone regretted the unavoidable absence of Professor de Lapersonne (France), and his presidential report was read by Professor Terrien. The scientific meeting was held the same day under the presidency of Dr. Parkdewis (U.S.A.). Professor van Duyse (Belgium) gave a résumé of an important paper on "Classification of the Causes of Blindness," which was followed by short papers by Mr. Paton, Mr. MacCallan, Professor Marquez, and Mr. Bickerton. Professor Francheschetti (Switzerland) then read at full length a paper on "Hereditary Diseases of the Eyes." It is proposed to hold a joint meeting of the two societies in Paris at the time of the annual congress of the Société Française d'Ophtalmologie in May, 1936. The subject for discussion will be "Epidemic Conjunctivitis in Children from Birth to the Age of Ten Years." The meeting of the trachoma organization will be held about the same time. The subject for discussion will be "The Treatment of Trachoma: (*a*) When Carried Out by an Ophthalmologist: (*b*) When Carried Out by a General Practitioner." Among the festivities arranged in honour of the foreign visitors there was a splendid entertainment given at Cloth-workers' Hall by the Master and Wardens on April 3rd. They were the guests of the Council of the Ophthalmological Society at the annual dinner on April 4th, and of Sir John Parsons and Mr. and Mrs. Leslie Paton at dinner on April 5th, before attending a reception at Lancaster House given by His Majesty's Government.

DIABETES MELLITUS IN CHILDHOOD

There can be little doubt that the appearance of diabetes in a child is due to the breakdown of a link in the metabolic chain which was weak from birth. In a recent short review of the subject R. Wagner[1] points out that in 39 per cent. of his cases of child diabetes there was a history of diabetic relatives, and 7 per cent. of the siblings of 174 cases were diabetic. Whilst many writers on the subject take the view that the hereditary factor is the most important, and that other so-called causes are merely contributory, it must have appeared to many clinicians that it is not altogether easy to accept this for all adult diabetics. In child diabetes the picture is clearer, and from its very severity and former prognosis one cannot escape the conclusion that heredity is the outstanding aetiological factor. Treatment with insulin in the last ten years has shown how much more careful we must be with diabetic children than with adults. As Wagner points out, the former are liable to great fluctuations in degree of successful stabilization. Perhaps the trouble lies partly in the fact that the child is not normally a stable organism because it is growing, and partly in the fact that, once clinical diabetes has been established in a child, the tendency is for the condition to progress to complete diabetes. Whereas with the adult it is the practice of some clinicians (particularly on the Continent) to prescribe insulin for intermittent periods after stabilization, such a procedure would be positively dangerous if applied to children. The readiness with which children will go into coma or pre-coma even after the discontinuance of insulin for only one or two doses should constantly be kept in mind, and no liberties must be taken. As the child grows the dose of insulin has to be increased until a sort of equilibrium level is reached, and the diet has to be modified to meet the increasing demands of the organism. In spite of one or two recorded cases of apparent regeneration of insulin-secreting tissue, the general consensus of opinion is that whilst insulin may to a great extent retard the onset of complete diabetes, it does not in the long run prevent it. The varying degrees of physical activity indulged in by the child contrast markedly with the way of life of the adult, and hence the probability of hypoglycaemia attacks is correspondingly greater. Since it is not desirable on both physiological and psychological grounds to insist upon a standardization of the physical activity of the child, those responsible for its welfare must be instructed in the symptoms of hypoglycaemia and of coma, and how to distinguish them. The question of the type of diet to be used for child diabetics can only be solved by the experienced clinician faced with the individual case. We have to choose between a fat-rich diet and one rich in carbohydrates and protein, or allow appetite to determine a free-choice diet. Good results have been reported for all three methods, which rather points to the possibilities of a free-choice diet. Nevertheless, a certain rigidity in this matter may be advocated, so that in emergency, when restriction becomes necessary, the

[1] *Nutrition Abstracts and Reviews*, October, 1934.

clinician is immediately in a position to remedy matters. On the question of prognosis it is too soon to pronounce an opinion on more than the immediate outlook, which is nearly always good. What the future holds for the child diabetic it is impossible to say.

WORK DURING PREGNANCY

It is universally accepted that a pregnant woman should live an ordinary life and indulge in such exercise as she desires providing it is not too vigorous and does not cause over-fatigue. This view, founded on clinical experience, receives support from experiments carried out by Schroeder and Franz.[1] They calculated the total oxygen consumption, the heart minute volume, and the difference between the arterial and venous oxygen content of the blood in women at work on a bicycle ergometer, both during the latter months of pregnancy and four months after delivery. The results show that women at the end of pregnancy doing light (46 metre-kilograms a minute) and medium (92 metre-kilograms a minute) work do not use more calories a minute than they do in the non-pregnant state. The authors conclude that pregnant women should be encouraged to perform light and medium work, which in their opinion prevents the development of anxiety and is the best preparation for labour. Schroeder and Franz also investigated the oxygen consumption of women during labour, and found that it gradually increased during the first stage, fell for a short time after rupture of the membranes, and then rose steeply, to reach its peak immediately before delivery. The oxygen consumption did not fall to the ante-partum figure until several hours had elapsed after the birth of the child, while the normal figure for the individual was not attained until the ninth day of the puerperium. The authors conclude that it is impossible to lessen the amount of work done during labour by means of drugs given to diminish pain. It must be assumed that fuller details of their investigation will be reported elsewhere, for the published data cannot be held to justify this conclusion.

DRUG ADDICTION

The report on the work of the Norwood Sanatorium (Rendlesham Hall) for the past three years, and the review of twenty-five years' experience at the sanatorium which was published in 1932, together furnish interesting clues to the incidence of drug addiction in Great Britain. The number of patients treated during this period was 7,658, and they came from all parts of the country. The great majority of the cases (89 per cent.) were of alcoholism alone, while in a further 2 per cent. alcoholism was combined with another drug. Before 1932 morphine and its congeners were responsible for 8 per cent. and cocainism for 0.5 per cent. of the cases, but since 1932 these percentages have dropped to 2 per cent, and *nil* respectively. This fall in the incidence of morphinism and cocainism is good evidence of the success of the Dangerous Drugs Act, and the figures clearly show that alcohol is by far the most important drug of addiction used in this country. The great majority (85 per cent.) of the addicts were males, and it appears that the proportion of young persons has risen during the last year or two. In no less than one-third of the cases treated at Rendlesham there was a family history of alcoholism. The report also points out that alcoholics are very prone to resort to other drugs, particularly paraldehyde and the barbiturates, and that a toper who takes an overdose of a barbiturate is particularly liable to develop pneumonia. As regards treatment the report is emphatic on the danger of sudden withdrawal of drink producing delirium tremens ; it advises gradual reduction in cases where there is evidence of high alcohol tolerance having been established. For many years atropine and strychnine injections have been used to assist the patient to overcome his desire for alcohol. The fact that chronic alcoholism is frequently associated with a low blood-sugar content has led to the trial of insulin and glucose therapy, and an increasing use of this method is reported.

[1] *Klin. Woch.*, 1934, li, 1818 ; lii, 1855.

HOUSING POLICY AND PRACTICE

Two pamphlets on the housing question have recently been published, one explaining the "Overcrowding Bill" now before Parliament, by Sir Francis Fremantle, M.P., issued from the Unionist Central Office ; the other, setting forth a housing policy more generally, being a Report of the Housing Committee of the New Fabian Research Bureau. The former can be commended without reserve as an admirably clear exposition of the present proposals of the National Government in relation to previous measures dealing with the same subject. In the presence of the multiplicity of Housing Acts of recent years and the rather confused administration resulting from them a clarifying pamphlet like Sir Francis Fremantle's had become almost essential. It is excellently done. It would be difficult, if not impossible, to set out the main points of the proposals now under consideration in a more orderly and effective way in brief compass. The point of view is that of a convinced supporter of the Government and of the Bill ; but there is nothing partisan about the author's explanation and advocacy, and his full knowledge of the whole subject, especially in its public health aspects, is well known and is evident on every page. The other publication referred to is also interesting and will doubtless be found useful by many. Its point of view is admittedly purely political and socialistic, and it is concerned with what the next Labour Government, with its assumed clear majority, must immediately do in relation to housing. Some of its proposals are drastic, but most of them are well reasoned. One of the most extraordinary (not so well reasoned) is that, while housing administration should remain under the Ministry of Health, that Ministry should be so reconstructed that responsibility for housing should be its main function, to which the Minister himself should devote his attention, all other public health activities of the Ministry being relegated to a subordinate position under the charge of an under-secretary. It is fair to say that an alternative to this remarkable proposition is given: that housing should be transferred to the Office of Works. In any case the New Fabian Bureau insists that housing must remain in its entirety a party political matter, and it gives the

Government no credit for any of its present proposals dealing with slums, with overcrowding, with re-planning of areas, or with reconditioning, though to a reader of the pamphlet it would seem that some of them go a good way to meet the requirements that the Bureau lays down. With these pamphlets we may mention a small book called *Unfit Houses*,[1] by Messrs. H. G. Clinch and B. G. Bannington. Both these authors are experienced sanitary inspectors who have previously written on sanitary and public health administration. Their present book is "a guide to Part II of the Housing Act, 1930," but contains a section on the new Housing Bill. It is so clear and practical in its exposition of the duties and the responsibilities of local representatives and officers in relation to its subject that it cannot fail to be of much value to all who are engaged in this branch of administration.

BLACK WIDOW SPIDER

It has been believed for centuries that the spider *Latrodectus mactans* is poisonous to man, and many cases of spider poisoning have been reported in the literature. This arachnid is frequently found at the opening of burrows made by ground squirrels,[2] and it has been found in abundance in the semi-arid unirrigated bench lands of the Yakima Valley in Washington. The creature is small and timid, and its bite has failed to produce any effect in some experiments on animals. Other experiments, however, have shown marked reactions in mice, rats, guinea-pigs, and chickens. Dr. A. W. Blair[3] has been heroic enough to make investigations on himself, and has described the clinical picture which resulted from the bite of the "black widow" spider. The first stage was marked by a lymphatic absorption and pain along the lines of drainage. When the venom reached the general blood stream there was a second stage of vascular dissemination, characterized by an explosive onset of widespread agonizing muscular pains and profound shock. Shock has not hitherto been mentioned in the literature, but was a critical stage in this experiment. Possibly previous patients had recovered before they were seen by their doctors or had not received enough venom to provoke the grave systemic disturbance. The third stage, that of elimination, commences with the rapid recovery from shock, and is characterized by hypertension, diaphoresis, gradually diminished muscular pain, a slight rise of temperature, polymorphonuclear leucocytosis, and urinary evidence of renal damage. The clinical picture strongly suggests the development of an acute toxic nephritis. The second stage of shock suggests the possibility of a histamine-like ingredient in the venom of arachnids, and this is supported by the salivation and lachrymation noted in certain animals bitten by this spider. Although the mortality rate is low, Dr. Blair believes that the possibility of death cannot be disregarded, as the second stage might be dangerous in diabetics, alcoholics, or patients with chronic heart or renal disease. In treatment, he says, it should be recognized that reaction is due to the instantaneous injection of small quantities of venom followed by rapid lymphatic absorption; that there is the probability of shock; that recovery is associated with the neutralization or elimination of the venom; and that acute nephritis may supervene in the later stages. The minute skin puncture and rapid absorption make it improbable that local measures will be of any value, though a sharp cross-shaped incision made in the first few minutes would be sound prophylaxis. The treatment of shock is along the usual lines, and the morphine required for relief of the agonizing pain must be used with caution. Immersion in a hot bath gave Dr. Blair immediate and pronounced relief from pain, and also marked the end of the shock period. Treatment during the third stage should be directed towards resting the kidneys, and frequent hot baths should be given. Morphine can be used in fairly high dosage at this stage, and spinal puncture is said to give considerable relief.

[1] *Unfit Houses. A Guide to Part II of the Housing Act, 1930, for Local Representatives and Officers.* By H. G. Clinch and B. G. Bannington. London: H. K. Lewis and Co. Ltd. (3s. 6d.)
[2] *Science*, 1935, lxxxi, 71.
[3] *Arch. Int. Med.*, 1934, liv, 831.

DR. ROBERT FORBES

In response to the unanimous invitation of the Council of the Medical Defence Union, Dr. Robert Forbes has accepted the post of General Secretary which became vacant owing to the death of Dr. James Neal on February 24th. Dr. Forbes has been Deputy Medical Secretary of the British Medical Association since 1932; he was previously a member of the Representative Body for three years, of the Council for two years, and of several major committees. He graduated in medicine at Glasgow University in 1915, and during his war service in the R.A.M.C. was associated with Professor Lovatt Evans in the administration of gas defensive arrangements. After demobilization he entered into a partnership at Gateshead, and took a leading part in civic and public work on Tyneside. When he relinquished general practice to enter the whole-time service of the B.M.A. Dr. Forbes was honorary consulting surgeon to the Gateshead Children's Hospital, and had for some years been prominent in the local work of the Association, as vice-president of the North of England Branch, and chairman of the Gateshead Division. The best wishes of all at headquarters go with him into his new field of work for the profession.

H.R.H. the Duke of York, accompanied by the Duchess, will formally open the new buildings of the Middlesex Hospital on Wednesday, May 29th.

The Board of Control, with the approval of the Minister of Health, has appointed Dr. G. W. Mackay and Miss F. H. M. Calder, M.D., to be Commissioners, on the retirement of Dr. S. E. Gill and Surgeon Rear-Admiral E. T. Meagher.

The twenty-fifth Oxford Ophthalmological Congress will be held in Keble College from July 3rd to 6th. On the morning of July 4th a discussion on plastic surgery of the eyelids and conjunctival sac will be opened with an address by Sir Harold Gillies. The Doyne Memorial Lecture will be given by Mr. Malcolm Hepburn on "The Role Played by the Pigment and Visual Fields in the Diagnosis of Diseases of the Fundus."

TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some of the major medical disorders met with in general practice

CONGESTIVE FAILURE

BY

SIR MAURICE CASSIDY, M.D., F.R.C.P.

General Principles

In the treatment of congestive failure absolute rest, mental and physical, is of fundamental importance. The patient must be strictly confined to bed and not allowed to make any unnecessary movement. Night and day nurses are essential. The patient should not be allowed to feed himself, and must be lifted on to and off the bed-pan with a minimal amount of disturbance. He should be discouraged from superfluous conversation, unnecessary visitors should be forbidden, and he should be shielded as far as possible from business or other worries. The bed should be neither too low nor too wide. The room should be adequately ventilated, but kept at a temperature of about 65° F. A dyspnoeic patient often demands that the windows should be thrown widely open, with the idea of alleviating his distress, and some nurses are inclined to be a little Spartan in their ideas of "fresh air." It must be remembered that cold is dangerous for these patients, and that it is sometimes wise to curb the propensity of either patient or nurse for free ventilation.

As to posture, the patient should be well propped up with numerous pillows, avoiding the common mistake of supporting the head and shoulders only, thus sharply flexing the spine. The whole spine from pelvis upwards should be supported and maintained at an angle of at least 45 degrees or, better still, at an angle approaching 90 degrees with the horizontal plane. The buttocks should rest on a biscuit-shaped air-ring underneath the draw-sheet. This posture may be maintained either by means of a knee pillow, or, if the patient is strong enough, with the help of an appliance known as the Hermit foot support—a padded board with an adjustable attachment to the foot of the bed. Owing to the weight of the oedematous feet and shins, the skin of the heels and ankles may become chafed and sore, and therefore may require protection. "Heart tables," such as Sister Rawson's, are often much appreciated by these patients, affording a well-padded support across the bed on which the patient may lean forward with folded arms. If such a table is provided with an adjustable padded support against which the patient can lean his forehead, so much the better. Some dyspnoeic patients find bed intolerable, and if so they may be allowed to spend the night well propped up in a really comfortable chair, preferably with the feet elevated. But they are best treated in bed altogether, and at all costs must be discouraged from frequent changes from bed to chair, and vice versa.

The diet should be simple and nourishing. The total amount of fluid in the twenty-four hours should not exceed 30 oz. Sugar is valuable, and may be given in the form of glucose lemonade (glucose 1/4 lb., two lemons sliced, water to the pint), or barley sugar may be sucked. Thin bread-and-butter, with jelly or honey, buttered or poached eggs, spinach, steamed fish, cream of chicken or of ham, and sweetbread are permissible, unless there is much gastro-intestinal disturbance. Weak China tea or cocoa may be taken, but not coffee. If the patient is accustomed to take alcohol he should be given two to four ounces of whisky or brandy in the twenty-four hours. Port, champagne, and beer should not be allowed. Gin is sometimes useful by virtue of its diuretic property. Table salt should be avoided, and in chronic cases of cardiac dropsy a salt-free diet is sometimes beneficial.

Acute Congestive Failure

Acute congestive failure is almost always associated with auricular fibrillation, less commonly with auricular flutter or, rarely, with a paroxysm of paroxysmal tachycardia. The type associated with auricular fibrillation is the most amenable to treatment, this condition being the one which responds so dramatically to digitalis, given in adequate dosage. We are often told by the patient or his relatives that he cannot tolerate digitalis. As a matter of fact such an idiosyncrasy to digitalis is rare, though some tact may be necessary in order to persuade a patient to take digitalis when he has experienced toxic symptoms on previous occasions.

Now that the *B.P.* tincture of digitalis is pharmacologically standardized we can rely upon its potency, always provided that it has not been too long in bottle. Personally I now prefer to use digoxin, because this preparation is stable, and is quickly absorbed and quickly eliminated. Ventricular slowing begins within an hour of the administration of 1 mg. by mouth and is maximal within seven hours. It follows that intravenous administration is rarely necessary, but in very urgent cases 0.75 to 1 mg. of digoxin injected intravenously will produce ventricular slowing within ten minutes, which will be maximal within two hours. Great care must be taken not to inject this preparation extravenously, as it is very irritant. If the ventricular rate is very rapid—150 or more—and if the patient is not already under the influence of digitalis, this drug may be given by the massive dosage method. To an adult weighing 140 lb. or more, 1.5 mg. of digoxin, or two drachms of the tincture, may be taken orally; for a lighter patient (for example, one of about 100 lb. weight) the dose would be 1.25 mg. of digoxin, or one drachm of the tincture. After six hours 0.25 mg. of digoxin, or 20 minims of the tincture, may be prescribed every six hours till the ventricular rate falls below 80. Digitalis must be stopped at once if the rate falls below 60; the appearance of coupling is an even more dangerous digitalis effect, for if digitalis therapy is continued when the rate is slow, with coupled beats, ventricular fibrillation and sudden death may supervene. Persistent vomiting or diarrhoea is also an indication for a rest from digitalis. When the ventricular rate has been controlled by digitalis, this drug must be persisted with in such dosage as will maintain the ventricular rate, by auscultation, at 70 to 80. This maintenance dose varies from patient to patient, and must be ascertained by experiment. Usually it is something like 10 minims of the tincture two or three times a day, or 0.25 mg. of digoxin once or twice daily.

If the patient is found by experiment to be really intolerant of digitalis, one of the strophanthus preparations may be employed. Of these the most reliable is ouabain, of which the average daily dosage is 0.25 mg. (1/240 grain) intravenously, or 2 to 4 mg. orally (in divided doses of 1 mg. each): 0.5 mg. of ouabain intravenously is roughly equivalent to 1 mg. of digoxin.

Venesection and Oxygen

If there is much engorgement of the neck veins, together with oedema of the lung bases and a large tender liver, venesection will give great relief. A French's bleeding needle may be inserted into one of the ante-cubital veins after the application of a sphygmomanometer armlet inflated to a pressure of 60 mm. Hg, and ten to twenty ounces of blood are withdrawn, according to the size of the patient. Personally, if they are obtainable, I prefer the old-fashioned leeches to venesection ; by their use a more gradual and prolonged venous depletion is secured. It is usual to apply the leeches over the liver, and this is a convenient site, though no doubt they would be equally efficacious applied elsewhere. It is sometimes advisable to encourage free bleeding after the leeches have dropped off by applying hot fomentations to the punctures, and it is as well to warn the nurse on no account to attempt to stop the bleeding. I have even known a zealous house officer to apply adrenaline to, and actually to suture, the oozing leech punctures, thus attempting to defeat the therapeutic design. It is sometimes necessary to repeat a venesection or leeching in twenty-four to forty-eight hours' time, if signs of venous engorgement reappear.

Oxygen should be administered freely in most cases, and always if there is much dyspnoea. The degree of cyanosis is a less important indication for oxygen than is dyspnoea. The oxygen cylinder should be provided with an easily working reducing valve. The oxygen should be bubbled through warm water in a large flask, whence it can be delivered conveniently and efficiently to the patient by a tube held in his mouth. Better still, it can be administered via a nasal catheter. The warmed and lubricated catheter is passed till it nearly reaches the posterior wall of the nasopharynx. Its proximal end is lightly secured to the patient's forehead by a broad band of strapping. Through it oxygen can be administered continuously, or for periods of fifteen minutes hourly, the tube from the flask being disconnected between periods of oxygen administration. Pure oxygen should be given, and not a mixture of oxygen and CO_2. The administration of oxygen through the time-honoured tube and funnel is almost useless, and should not be allowed.

Symptomatic Treatment

Insomnia.—This is always troublesome in congestive failure, and measures should be taken to combat it. A few hours of peaceful sleep may effect a remarkable improvement in the patient's condition. For very restless and delirious subjects paraldehyde is far the safest and most effective hypnotic, and the patient will forgive its nauseating taste and odour if it brings him a good night's sleep. It is usually prescribed in hopelessly inadequate doses. It is best given by the rectum—in doses of 6 to 8 drachms well shaken up in four ounces of warm saline. If taken by the mouth, the simplest and most popular method of administration is to give 4 or 6 drachms of paraldehyde in one ounce of gin ; alternatively, it may be prescribed in orange juice. For milder cases of insomnia a combination of bromide and chloral is indicated —for example :

℞	Pot. brom.	gr. xx
	Chloral hydrat.	gr. xx
	Syr. zingib.	ʒ j
	Aq.	ad ʒ j

Hypnotics of the barbitone group are not very satisfactory in this condition, and are, I think, more apt to produce mental confusion than is the above prescription. However, if bromide and chloral are not tolerated by the stomach, a tablet of medinal, 5 to 10 grains, may be taken, crushed and dissolved in a little hot water. It has the advantage of acting rapidly. Morphine is not the hypnotic of choice in congestive, as it is in left ventricular, failure, but may be necessary if other sedatives fail, and particularly if pain is present, as, for example, in the event of pulmonary infarction. Sometimes quite a small dose (for example, 1/6 or even 1/8 grain) may be effective, especially if combined with chloral and bromide by the mouth. For a restless or maniacal patient who cannot, or will not, take paraldehyde, 2/3 grain of omnopon combined with 1/100 grain of scopolamine, hypodermically, would be indicated. Morphine should not be prescribed where there is much oedema of the lungs.

Cough.—This is inevitable in congestive failure, and the only really effective treatment of it is that designed to relieve the congestion. It is worse than futile to ply these waterlogged patients with expectorants, and thus increase the fluid which already clogs their bronchioles. Atropine is contraindicated because of its accelerating effect on the ventricular rate. For the dry tickling variety of cough which disturbs sleep, a codeine linctus is useful :

℞	Syr. codein. phos.	♏ xxx
	Acid. citric.	gr. j
	Glycerin.	♏ x
	Spirit. chlorof.	♏ iij
	Mucilag. tragacanth.	ad ʒ j

To be sipped in an ounce of hot water.

Regulation of the Bowels.—The bowels should be kept on the loose side by means of a morning dose of concentrated saline. This helps to relieve the portal congestion which is invariably present. One or two drachms of magnesium sulphate may be given in one ounce of hot water. If there is vomiting, one-half to one ounce of magnesium sulphate may be given in half a pint of warm water as an enema. It is important to avoid purgation, with its attendant disturbance. If constipation is troublesome, an enema is preferable to purges by the mouth. Diarrhoea, if present and exhausting the patient, should be checked by bismuth and opium :

℞	Bismuth. carbonat.	gr. xl
	Tinct. opii	♏ x
	Pulv. tragacanth. co.	gr. v
	Aq. menth. pip.	ad ʒ j

Pain.—This is not a common symptom of congestive failure, but it may be severe in the event of pulmonary or splenic infarction. Counter-irritation in the form of a mustard leaf, or dry-cupping, often leads to surprising relief, but morphine may be necessary. The pain of hepatic congestion usually yields to venesection or leeching.

Chronic Congestive Failure

Chronic congestive failure may follow acute failure with fibrillation. More commonly it is seen as a sequence to left ventricular failure with normal sinus rhythm—for instance, in hypertensive failure, or in the later stages of cardiovascular syphilis, or following a slow coronary occlusion, or in the late stages of emphysema or of pulmonary fibrosis.

The general principles of treatment have already been dealt with. If fibrillation is present, digitalis is prescribed (as previously indicated) in such dosage as will maintain the ventricular rate at 70 to 80. If, on the other hand, the heart is failing with a slow sinus rhythm, digitalis is not likely to be so effective, though worth a trial. It may be given in the form of Guy's pill :

℞	Foliae digitalis	gr. j
	Pil. hydrarg.	gr. j
	Scillae	gr. j

One pill once or twice a day.

If a satisfactory diuresis is not thus obtained, 15 grains of diuretin (theobromine sodium salicylate) three times a day may be tried. This nauseating drug is best taken in the form of tablets, to be swallowed whole. It should not be given for more than three or four days at a time. If diuretin is not tolerated by the stomach, theocin sodium acetate, 3 grains dissolved in 1/2 oz. of peppermint water, may be successful, administered three times a day for three consecutive days weekly. This drug can also be injected subcutaneously, 3 grains dissolved in 15 minims of sterile water. But without a doubt the most valuable diuretic in these cases of chronic cardiac dropsy is either salyrgan or novurit, the introduction of which has revolutionized the treatment of this condition. The dose is 1 or 2 c.cm. intramuscularly, or preferably intravenously. The diuretic action of these drugs is enhanced by the administration of 90 to 120 grains of ammonium chloride in two or three ounces of water, given by the mouth half an hour before each injection of the salyrgan or novurit. The injection should be made in the morning, for if made in the evening the copious diuresis produced (which may be as much as five to ten pints in the twenty-four hours) interferes with sleep. Not more than two injections should be given each week, and if diarrhoea is produced this treatment should be discontinued, or a severe and possibly fatal enterocolitis may be produced.

It is important to restrict fluids to thirty or even twenty ounces in the twenty-four hours, and a strictly salt-free diet should be ordered. Gentle massage, and if the patient's condition warrants it, passive movements of the limbs, are also helpful.

Drainage of Oedema

If the oedema persists in spite of the above measures, an attempt should be made to get rid of it by drainage. The patients suitable for this form of treatment are those with tense but soft oedema, with shining skin. Long-standing cases with tough, indurated integuments seldom respond well to drainage, and if the skin is septic drainage is not safe. Nor should drainage be attempted with a restless or delirious patient. Before drainage, the patient should be kept sitting for some hours in a really comfortable armchair, with feet pendent. If he is not fit for this, the head of the bed may be raised on six-inch blocks. Southey's tubes may be used, at least four being inserted deep subcutaneously into the dorsum of each foot, or round the ankles. Care must be taken to ensure that the fine rubber tubing leading from each Southey's tube to the drainage receptacle is not blocked by clot ; the nurse should be instructed to massage periodically each of these tubes downwards from tube to receptacle. With Southey's tubes there is less risk of cellulitis, and there is less attendant discomfort for the patient than is the case with drainage by means of multiple incisions, but there is no doubt that a more efficient and rapid drainage is obtained by the latter means.

To drain by incisions, six to twelve cruciform incisions are made into the deep subcutaneous tissues by a tenotomy knife. These incisions are made over the dorsum of each foot. This can be done painlessly under light freezing by an ethyl chloride spray. The incisions are covered by gauze soaked in glycerin of perchloride of mercury, which is useful for its hygroscopic as well as for its antiseptic action. The feet are placed in a large bowl if the patient is sitting ; if he is in bed the fluid drained must be absorbed in voluminous wool dressings, frequently changed. If there is any considerable pleural effusion this should be aspirated, preferably combined with an air replacement by means of an artificial pneumothorax apparatus. It is not often necessary to tap the abdomen for ascites in congestive failure, but this should be done if ascites is gross and does not quickly yield to diuretic treatment, combined perhaps with drainage of the legs. When so doing it is advisable to remove the fluid slowly through a fine cannula rather than to employ the large cannula usually provided for this purpose.

Insulin Treatment: Thyroidectomy

With the object of replenishing the store of glycogen in the myocardium, insulin, 5 units, may be prescribed two or three times a day, with a simultaneous dose of 10 to 15 grams of glucose by the mouth, in the form of barley sugar or as glucose lemonade. This form of treatment is, in my experience, beneficial in the more chronic cases, and is sometimes worth a trial even in acute cases.

During the last two years the operation of total thyroidectomy has been advised for the treatment of chronic congestive failure where other methods of therapy have failed. Dramatic results have been described, particularly in America. This method of treatment is still *sub judice*, and obviously it should not be employed until it seems certain that the patient is going downhill and has ceased to respond to medical treatment. It must be remembered that some patients with chronic congestive failure make, with medical treatment only, most remarkable and quite unexpected recoveries after many months of desperate illness. On the other hand, the operation risk of a total thyroidectomy in these cases is, in the hands of an expert surgeon, not as serious as might be anticipated, so that this treatment seems worthy of trial in carefully selected cases. At the same time I must confess that in my own very limited experience the results have not been very encouraging. When, however, congestive failure and auricular fibrillation are associated with a toxic goitre, the surgeon's aid can and should be invoked, usually with gratifying results. After the ventricular rate has been controlled by digitalis, Lugol's solution being administered simultaneously in a dosage of 10 to 15 minims, three times a day, a subtotal thyroidectomy is usually successful in restoring normal rhythm. If normal rhythm is not restored by the operation, a short course of quinidine after the operation rarely fails to bring this about. Not infrequently this treatment is capable of transforming an apparently hopelessly bed-ridden and almost moribund patient into a man or woman who is fit for quite a hard day's work.

After-care

Complete rest in bed should be enjoined for two or three months after all oedema and other evidences of congestive failure have disappeared. When the patient is allowed to move about in bed, and subsequently to get up, increase in the amount of effort permitted must be very cautious, and he must be treated as an invalid for at least six months.

Further information about the fourth International Hospital Congress at Rome from May 19th to 26th has now been received, and it should be noted that the last day for enrolling has been postponed until April 30th. A handsomely illustrated programme of the congress has been issued in various languages including English, the main topics to be discussed being the hospital in the public health scheme, general organization and equipment, hospital protection in war time, and the best disposition of wards and departments from the point of view of the patients as well as of administration. Tours of the chief Italian cities have been arranged for the periods before and after the congress sessions. All inquiries should be addressed to the general secretary of the congress, Ospedale di S. Spirito, Rome.

OSTEOPATHS BILL: SELECT COMMITTEE

TWELFTH AND FINAL SITTING

THE BILL TO BE WITHDRAWN

When the House of Lords Select Committee on the Registration and Regulation of Osteopaths Bill met on Friday, April 12th, Mr. Thorpe, K.C., for the applicants, made an important statement.

Statement of Counsel for the Osteopaths

Mr. Thorpe said that in his opening speech on March 4th he had explained, as the reason for the Bill, that as at present there was no distinction between qualified and unqualified osteopaths a register should be formed and a standard laid down by Parliament as to the qualifications that would entitle to registration. In the course of the inquiry the issue had been raised that before such a register was granted the osteopaths must prove the scientific justification for their theory. That was the main point taken by the medical profession. That being the issue—and he did not think he could have resisted it—their lordships were asked to make a finding on a matter which, with all respect, was beyond some of them. He himself had some little general knowledge, but when he came to consider the merits of this matter he found that he was reading a language which he could not understand.

The Bill as originally put forward required for its main structure the existence and continuance of the British School of Osteopathy. Dr. Macdonald in his evidence had said that he himself was not satisfied with the standard taught by that school, and therefore he (counsel) did not feel justified in asking their lordships to pass the Bill with the school as at present constituted occupying the position proposed for it in the organization to be set up. That being so, his clients felt that they would not be justified hereafter in asking their lordships to pass this particular Bill.

In saying this he hoped their lordships would not think that the osteopaths had lost any faith in the theories for which they stood. Dr. Macdonald and Mr. Streeter had both stated publicly that they welcomed inquiry and were prepared to take up any challenge made against them for the purpose of proving their doctrines to be scientifically sound. The position altered very considerably when Sir Norman Walker, President of the General Medical Council, gave evidence at the previous sitting. Lord Elibank had asked Sir Norman whether he would favour an investigation into the whole principle of osteopathy, and he had said that he would have no objection to a Royal Commission. Sir Arthur Robinson, who might be taken as expressing the considered opinion of H.M. Government, had also said that he felt that "an organized and careful scientific inquiry into the principles and practice of osteopathy" should be made by a body suitable for the purpose.

Royal Commission Suggested

This was a suggestion for a policy which he earnestly prayed their lordships would feel disposed to accept. He was further instructed to say, following upon another suggestion by Sir Arthur Robinson, that a voluntary register of osteopaths would immediately be formed, and as soon as possible a school of osteopathy qualified to give a proper training would be constituted, and a clinic would be brought into operation. It was not for him to do more than respectfully urge on the Committee that an inquiry in the form of a Royal Commission or some properly constituted responsible body should be set up to consider the scientific justification for the theories he was instructed to advocate.

Lord Elibank: Theory and practice.

Mr. Thorpe said that the inquiry should cover the whole field of osteopathy. He wished respectfully to suggest, however, that the gentlemen who had already expressed their condemnation of osteopathy in the statement put in on behalf of the professors and lecturers in biological and medical science, qualified though they might be to judge on this matter, would not, in his submission, be the best judges of a question which, one hoped and anticipated, any such commission would approach with an open mind.

Whatever were the merits of this case, he wished as publicly as possible to make this claim—that the present Bill and the inquiry which their lordships were now conducting had been asked for and promoted by the osteopaths themselves. One medical witness at the previous hearing had suggested that their cause was "fraudulent," and a good deal of publicity had been given to that statement. But it was the osteopaths, with the assistance of the noble lord (Lord Elibank), who had come into the open and had urged the presentation of this Bill in Parliament. They had satisfied at any rate one noble lord, and they were ready to submit with confidence to any issue to be decided hereafter by an impartial tribunal.

The alternative to the course he was now taking would be to take further evidence from the medical and other professions directed to an issue which perhaps was not a proper one for their lordships to consider. He was instructed, therefore, not to press for the Bill in its present form, and he had had an opportunity of conferring with Lord Elibank, the promoter of the Bill, and spoke with his authority.

Mr. Cyril Radcliffe, K.C., for the Royal Colleges, said that if the Bill was to be withdrawn it was not for him to delay the Committee by a speech or by further evidence, but if their lordships were being asked for some recommendation in favour of further scientific inquiry he must make it plain that the evidence which he had been prepared to bring forward would have been directed to passing very severe comments on the value of the A. T. Still Bulletins and other documents which had been put in by the osteopaths.

Mr. Thorpe said he was sorry if he had not made the matter clear. If the Committee decided that the Committee should not pursue the matter further, the position would be that of no finding one way or the other. He took it that they would part with neither side claiming a victory, and the issue between his learned friend and himself would remain quite open.

Mr. Radcliffe said that he had not meant to suggest anything to the contrary.

Mr. H. F. Dickens, on behalf of the British Medical Association, said that he did not want to detract from the general amiability, but they had come there to consider the Bill, and he gathered that Lord Elibank and the other supporters of the Bill were now going to withdraw their support from it. Therefore there was nothing left for the Committee to consider.

Mr. Thorpe said that he was not speaking for Lord Elibank.

Mr. Dickens, continuing, said that his clients were entitled to know whether the Bill was to be proceeded with or not.

The Committee at this point held a private deliberation, and on the readmission of counsel and the public the Chairman (Lord Amulree) said that their lordships had given attention to the statements just made by counsel, and there were two further witnesses they desired to hear—namely, Dr. Graham Hodgson and Sir Henry Dale. In the circumstances they did not think it necessary to proceed to hear any further evidence, but it was open to Mr. Thorpe to cross-examine Mr. Souttar, who had given his evidence in chief.

Mr. Thorpe said that he did not propose to cross-examine Mr. Souttar, but it must not be taken that he accepted what Mr. Souttar had said.

Mr. Jones, counsel for the Nature Cure Association, said that some reflections had been made on the work of nature curers, and he had desired to bring forward evidence to show that they were serving the public successfully and without harm.

The Chairman said that the Committee would take Mr. Jones's statement as sufficient for that purpose.

Radiological Evidence

Dr. H. K. Graham Hodgson, university teacher of radiology at Middlesex Hospital Medical School, and a practising radiologist, was then called to the witness-chair and examined by Mr. Radcliffe. He had with him *x*-ray viewing boxes with which he demonstrated certain points in films to the Committee. He said that the function of the radiologist was to detect by means of his pictures whether a condition was normal or abnormal, and for this purpose a full and expert

knowledge of anatomy, pathology, and clinical medicine was required. He had had the opportunity of examining the radiographs which Dr. Kelman Macdonald had produced to the Committee when giving his evidence as illustrating the osteopathic lesion. All the cases showed curvature or other abnormalities of the spine. There was nothing novel about them; they were the kind of abnormalities that were seen from week to week in his own practice, abnormalities which the orthopaedic surgeon was constantly treating by orthodox methods.

Asked whether, before this inquiry opened, he had heard of the osteopathic lesion, Dr. Hodgson said that he had tried on every occasion when he had come across a case which had gone on to an osteopath after having been treated by an orthodox doctor to find out exactly what interpretation the osteopath had put on the film which he himself had taken, but until Dr. Macdonald presented to the Committee his new book, *The Scientific Basis of Osteopathy*, he had never been able to understand what was meant by the osteopathic lesion. Dealing in detail with the radiograms which Dr. Macdonald had exhibited, he said that one pair of them, taken of the same case before and after treatment, one in October and the other in the following February, were not properly comparable because the tube had been centred at different points. There was a difference of three inches between the points at which the tube had been centred in the first and second pictures. For this reason—purely a defect in technique—there were appearances in the one film which were not in the other. The curvature of the spine was the same in both cases, but unsound inferences might be drawn from the fact that the conditions so far as the disposal of the apparatus was concerned were different.

Dr. Hodgson next dealt with certain statements made by Dr. Macdonald in the book just mentioned in discussing four of the A. T. Still Research Bulletins. Dr. Macdonald had said:

"It is rare that the stereoscopic film fails to show a lesion which is palpable to the fingers. It is true that bony maladjustments are sometimes absent in the film when they are considered to be present by the evidence of palpating fingers; in such cases the *x*-ray film nearly always shows the localized oedema or fibrosis which is responsible for giving the deceptive findings on palpation."

The witness's comment on this passage was that the radiograms which he had put in to demonstrate these lesions were merely examples of simple adolescent curvature of the spine, very common in young growing subjects—the ages of the patients were from 15 to 23—an abnormality which had been recognized by the medical profession for generations. But when he saw the statement just quoted, a statement such as would not have been made by any experienced radiologist, he decided, keeping an open mind on the question, however astonished by the claim, to carry out a series of experiments. Oedema was simply a waterlogging of the soft tissues of the body as a result of strain or neighbouring inflammation. A localized oedema such as was mentioned in this passage would mean an infiltration of a small amount of the water content of the blood into the soft tissues alongside the spine. Dr. Hodgson described an experiment which he had carried out with two pieces of steak, each of the same thickness and weight, into one of which he had injected water with a hypodermic syringe until its weight had increased by 50 per cent., thus creating an artificial oedema. These he had placed on the abdomen, and *x*-ray pictures were taken. In the prints which he exhibited the shadows appeared to be of equal density; it was difficult to tell the one from the other. In another experiment he got a man to drink a pint of beer and immediately took an *x*-ray picture, but although there was a pint of fluid in front of the spine, it was not apparent. So far as he had been able to test it, therefore, the claim made by Dr. Macdonald so far as *x*-ray evidence was concerned was not scientifically accurate. If it was a valid effect it would be of tremendous help. He mentioned the work which had been done in discovering a dye which would help to visualize the gall-bladder; the gall-bladder might contain an ounce of bile, but it would be quite invisible to *x* rays in the ordinary way. Dr. Macdonald had spoken of a teaspoonful of fluid, but he himself had injected an amount of water equal to forty teaspoonfuls alongside a spine post mortem, and had been unable to see it in the *x*-ray photograph.

As for fibrosis, he took a patient who had had seven major abdominal operations, so that the abdomen was simply covered with scars, but in the *x*-ray photograph no scars whatever were apparent. Dr. Macdonald in a case of his own had pointed to a shadow which he said indicated "fibrosis of the lateral ligaments of the spine." But in fact there were no lateral ligaments; there were anterior and posterior common ligaments, and ligaments on the spinous processes, but there were no ligaments on the side of the spine, because on the side of the spine were the vessels and nerves to which Dr. Macdonald had attached so much importance. In reply to a further question, the witness said that he was accustomed to see hundreds of radiographs of abdominal conditions, invariably including the spine, but he had never detected in his experience any interrelation between lesions of the spine and abdominal lesions. He had kept an open mind on the subject, and had always examined the spine, not particularly for the osteopathic but for any lesion.

Cross-examination of Dr. Graham Hodgson

Mr. Thorpe, in entering upon the cross-examination, said that he must be forgiven for the crudeness of his questions, because this was territory with which he was entirely unfamiliar. He asked, first of all, whether it was not a fact that different results were forthcoming according to the length of *x*-ray exposure. The witness replied that this related only to a moving object. A short exposure was necessary in that case to get a clear image. Counsel said it had been suggested to him that any radiological appearance of fibrosis would disappear with a long exposure; the witness did not agree. He said that short exposures were always made if there was movement in the part, but long exposures—from four to seven seconds perhaps—were made when the definition was not likely to be interfered with by movement.

Counsel next asked about the oedema, which the witness had described as a waterlogged condition; a man who drank a tankard of ale did not get waterlogged. The witness explained that the radiograph was taken immediately after drinking. He also said that he had injected into the muscles in the back of a corpse amounts of water from 1/2 oz. to 5 oz., trying to simulate oedema as much as possible, and had taken radiograms before and afterwards. He endeavoured to get the water as evenly distributed as possible. Mr. Thorpe suggested that to massage water injected into a dead body could not possibly reproduce the waterlogged condition or "morass" seen in the living. The witness agreed that it could not reproduce the inflammation, but from the photographic point of view it produced just the same effect. Counsel said that waterlogging of the body was a condition that might have taken weeks to arise—a static condition, not like the passing of fluid through the body, and that Dr. Hodgson's experiments with beefsteak were fallacious. The witness said that it was simply a question of the density of fluid in a soft tissue. Lord Dawson put it to the witness, and he agreed that it was technically impossible to discern by *x* rays the infiltration of fluids along the soft structures by the side of the spine.

Mr. Thorpe: As a matter of fact, *x*-rays are only photographs of shadows.—Yes.

Would you agree that they are very often open to diverse interpretations?—Yes.

There is no common code of deciphering?—Oh, yes. The radiogram does not lie, but the person who examines the radiogram may misinterpret it.

What appears to you to be the story told by an *x*-ray photograph may not be the story as it appears to another medical man?—No, of course not; we may have a difference of opinion. But on the condition of oedema there is not one radiologist in the country who would agree with what Dr. Macdonald has said.

Would all the radiologists in England arrive at the same conclusion as you have done from that picture?—Yes, I am quite certain they would.

Dr. Macdonald has described a case in which he says all the trouble is referable to a pelvic twist. Do you agree with Dr. Macdonald that the *x*-ray picture shows what is medically called a lateral curvature of the spine?—Yes, not a pelvic twist.

Is it the usual S-shaped curvature with compensation?—I think Dr. Macdonald called it a single curvature; it is a double curvature.

Differences in X-Ray Interpretation

After some further questions Mr. Thorpe remarked, "The only thing that emerges is that the witness and Dr. Macdonald cannot agree. It seems fruitless for me to pursue this cross-examination. Can I leave it at this point, that Dr. Macdonald does not accept these criticisms of his *x*-ray photographs?"

The Chairman (to witness): Does it amount to this, that Dr. Hodgson interprets it in one way and Dr. Macdonald in another?—Our premisses differ.

Mr. Thorpe: Dr. Macdonald's point is that the curvature is there, but secondary to the pelvic tilt?—I agree.

And he says as an osteopath that the primary cause of this child's illness is that the pelvic tilt is present?—He does not include the hip-joint [in the picture]. The patient may not have been standing correctly. You would get the same kind of radiograph if the young woman had one heel on the ground and the other heel off.

Mr. Thorpe said he was assured by Dr. Macdonald that care was taken to ensure that the patient was in the correct position. Evidently Dr. Hodgson and Dr. Macdonald were fundamentally opposed.

Lord Dawson asked whether it might be taken that radiologically the osteopathic lesions of which they had read in the work presented by Dr. Macdonald were incapable of being shown alongside the spine, to which Dr. Hodgson replied in the affirmative.

Lord Elibank questioned the witness as to what he understood by the osteopathic lesion. Dr. Hodgson quoted the following from the A. T. Still Bulletin:

"The osteopathic bony lesion is a disturbance in the relations of bones, not associated with rupture of ligaments, and usually not of a degree beyond the possible normal relations of these under certain circumstances."

A curvature of the spine such as appeared in the radiographs which had been exhibited was, as far as he understood it, an osteopathic bony lesion. He had not had an opportunity of discussing this with Dr. Macdonald, but if a disturbance in the relations of bones not of a degree beyond the possible normal relations of these under certain circumstances was an osteopathic bony lesion, then it also followed that curvature of the spine might not be beyond the normal relations. A person by tilting the hips could maintain temporarily a curvature of the spine, but if that curvature persisted it would be, according to Dr. Macdonald, an osteopathic lesion. A Christian Scientist might call osteitis a Christian Science lesion.

The Osteopathic Vertebral Lesion

He agreed with a remark in *The Scientific Basis of Osteopathy* that "the stereoscopic film rarely fails to show a lesion that is palpable to the fingers." When it was further stated that bony maladjustments were sometimes not seen in the film, though evident on palpation, but that in such cases the *x*-ray film nearly always showed the localized oedema or fibrosis, this referred, as he understood, to the osteopathic vertebral lesion, which was defined in the work in question as

"an acute or chronic joint strain, with or without deviation from the normal of the relative position of the bones involved, which deviation, if present, does not amount to dislocation. Mobility is altered from the normal—it is either decreased or increased. In the lesioned area there are changes in some or all of the articular and periarticular tissues, affecting blood and lymph vessels, nerve endings, nerve fibres, and nerve cells."

Dr. Hodgson commented on the fact that in a book of nearly 400 pages less than a page and a half was given to *x*-ray evidences of lesions. It was also said that "vertebral lesions do not show distinctly at a glance, and persons who are accustomed to the vividness with which a broken bone is shown on an *x*-ray film may be disappointed, and may even fail to find vertebral lesions," and then followed the reference to oedema and fibrosis, which he took to mean, in Dr. Macdonald's view, a vertebral lesion, although, as he had shown, not visible by *x* rays.

Lord Elibank: But you do understand what the lesion is?—I understand what Dr Macdonald thinks it is.

Lord Dawson: Would you say fibrosis and oedema are acid tests as criteria of the vertebral lesion?—I would.

Then I understand it is technically impossible, as shown by your experiments, to disclose the presence or absence of oedema?—That is so.

Lord Esher: Is radiology foolproof?—The radiologist himself may be a fool, and therefore radiology is not foolproof. It is the interpretation that is essential.

We know that doctors differ entirely.—On this particular point I am sure there is no radiologist on the staff of a hospital who would agree with what Dr. Macdonald has affirmed. I have nothing to do with theories, I am simply concerned with facts. What Dr. Macdonald has said with regard with oedema and fibrosis is completely wrong. I disagree with the interpretation.

But does that suffice to prove there is nothing in the osteopathic theory?—I cannot say that. I am simply speaking with regard to *x*-ray evidence. What I do understand is a disturbance of the relationship of the vertebrae. You see hundreds of cases—any ordinary scoliosis.

Lord Elibank asked some questions leading up to the suggestion that, the presence of the osteopathic bony lesion being admitted, osteopathic treatment might be more satisfactory than medical. The witness said that he had nothing whatever to do with treatment.

Lord Redesdale asked whether it would be easier to discern these appearances stereoscopically. Dr. Hodgson replied that one would always examine any of these cases stereoscopically, but that would not make any difference with regard to seeing the fibrosis. In reply to another question he said that of the many hundreds of cases of pneumonia he had seen he had never observed the condition as due to something wrong in the spine.

Lord Marley took up a reference in the book put in by Dr. Macdonald to the essential difference between bipeds and quadrupeds, and to the statement that "the quadruped gives himself, very crudely, 'an osteopathic treatment every time he walks.' Each step increases flexibility, and the alternate rotations to right and left facilitate return of the bones to their normal relationships." He asked whether, if successive radiographs were taken with the patient standing up and lying down there would be any visible evidence of the vertebrae being closer together in the first position. Dr. Hodgson said that that was an interesting point; he had never actually made measurements, but he thought it likely that the vertebrae would be a little closer, though this might not be apparent to the radiologist. Lord Marley thought there might be more normal movements of the vertebrae in the recumbent position, and asked in which position radiographs were commonly taken. Dr. Hodgson said that the choice of position entirely depended on the case.

Lord Dawson said that evidence had been given earlier in the inquiry as to the possible effects of troubles in the upper cervical spine. What was the witness's experience radiologically of rotation of the axis and atlas and the third and fourth cervical vertebrae? Dr. Hodgson said that he saw about forty axis and atlas vertebrae a week, and he had done a large amount of radiology of the nasal accessory sinuses, but he had never seen any connexion between disease of the sinuses and lesions of the cervical vertebrae.

This concluded the radiological evidence.

Sir Henry Dale's Evidence

Sir Henry Dale, Director of the National Institute of Medical Research and Fellow and Secretary of the Royal Society, was next called and examined by Mr. Radcliffe. He explained that the National Institute was the central research body of the Medical Research Council, which administered a Treasury grant under the Privy Council.

The witness said he had inspected as far as possible within the time the Bulletins of the A. T. Still Research Institute, but especially Bulletin No. 2, which embodied a series of experiments by Dr. J. Deason to determine the relation of spinal lesions to carbohydrate metabolism, and three or four of the papers dealing with the osteopathic theory.

What are your conclusions as to the general work indicated in the remainder? Do you think that the evidence they contain is the kind of evidence you would recommend for submission to the Royal Society for its consideration?—No, I should not take the responsibility of recommending it.

Or for publication in any scientific journal for which you were responsible?—If I were called upon to give an opinion as to the suitability for publication in a scientific journal of any of these contributions it would be adverse, with one exception, a contribution which has no reference to osteo-

pathy, and which was properly published in the *American Journal of Physiology*. With regard to the remainder, my opinion would be that they were not really of scientific value.

That is not because of any doctrine they tend to support?—No; my prejudice, if I have any, would be in favour of a doctrine which ran contrary to received opinion. That is inevitable if one is a scientific investigator, for one spends one's life examining the basis of accepted views and hoping to enlarge science by upsetting them and substituting sounder views on better evidence.

What would be your objections to recommending these papers as worthy of scientific consideration?—My difficulty would be that they do not seem to me to have the first qualification of really scientific investigation, which is to obtain new knowledge. They have the appearance to me of being experiments carried out in order to provide evidence for a theory already accepted. It might be valuable to attempt to discover what was the meaning of the suggested relation between particular spinal lesions and particular physiological facts. I find no evidence of any attempt to discover the meaning of the relation; the object seems simply to find evidence that it exists.

You are yourself an experienced research worker?—I have spent all my active life in research.

I suppose it is necessary for that purpose to be experienced in experimentation on animals, is it not?—For the particular kind of investigations with which I am concerned and with which the report in Bulletin No. 2 is concerned.

Do you think the workers show sufficient experience?—I formed the impression that they did not.

Do you think they show evidence of ability to distinguish what is important from what is unimportant in research?—I should say they do not show that ability.

Experimental Production of Glycosuria

Do you find that in their papers there are abnormalities in the human body attributed by them to the presence of an osteopathic lesion?—I have not devoted my attention so much to the Bulletins concerned with abnormalities in the human body. May I speak particularly of Bulletin No. 2, which deals with the relation of spinal lesions to carbohydrate metabolism? This paper describes a number of things which to the mind of the experienced research worker appear glaring novelties and are put forward as though they were matters which could be accepted without comment. The experiments relate to the production of glycosuria in animals by artificially created osteopathic spinal lesions. Glycosuria in its main human manifestation is diabetes mellitus. The investigator, Mr. Deason, takes thirty-three dogs for the experiment and subjects them, quite properly, to a period of preliminary observation under the conditions of the experiment. They are caged and fed as they are going to be when under observation after the spinal lesion is created. He found that out of those thirty-three normal dogs, chosen, apparently, without any relation to their particular suitability for such purpose, eighteen showed a natural glycosuria to such an extent that he could not use them for the experiment. He appears to have discovered in over 50 per cent. of normal dogs a degree of glycosuria of the same order as that which he expected to produce by the infliction of a spinal lesion; and if you look at the details of the experiment, in a few cases where the normal glycosuria is described in detail before the animal is rejected, it is recorded as actually of the same order. The second point that strikes one is that when he selected the fifteen animals which show at most what he calls a trace of sugar in the urine, and proceeds to inflict the spinal lesion and to produce degrees of glycosuria which are described by Dr. Macdonald in his summary as "varying in amount from a trace to 5 per cent."—5 per cent. being a very high degree of glycosuria—there is no evidence throughout the description that any of these dogs showed symptoms compatible with glycosuria of that degree. Some of them gained in weight, their appetites were not a matter for comment except that they remained good, they were not said to be excessive, there is no description of their showing abnormal hunger and thirst, and the volume of urine excreted by these dogs which had been rendered glycosuric by the spinal lesion is in the majority of cases smaller than that which they were excreting before the lesion was inflicted.

Asked for his comment on this work, Sir Henry Dale said that he found it impossible to attach any scientific importance to the paper. If the glycosuria which was described was a genuine phenomenon then it was something quite new, having no relation to diabetes in man, for example, and no attempt was made to explain it. Apparently the implication was that it was an experimental demonstration of the fact that the spinal lesion could produce glycosuria of the type which was important in renal disease. He added that he had chosen this as an example because he believed some reliance had been placed upon it in previous evidence.

Attribution of Disease to Osteopathic Lesions

Do you find throughout the Bulletins any evidence justifying the attribution of particular diseases to particular osteopathic lesions?—I find none that would convince me at all.

We have had a number of diseases mentioned in this inquiry. Do you find any evidence with regard to typhoid which would justify you in attributing that disease to an osteopathic lesion?—None.

And a number of others—diphtheria?—No.

Epilepsy?—No.

Diabetes?—No.

Sir Henry Dale mentioned one other matter in the summary by Dr. Macdonald of later Bulletins. He described an experiment on a normal cat, which was anaesthetized, and the abdomen opened and the spleen exposed to view. Dr. Macdonald had continued:

"Stimulating manipulations applied to ninth thoracic tissues, causing rapid movements of ninth thoracic vertebrae and alternating pressure and relief of pressure upon the soft tissues of the vicinity. Splenic capsule wrinkled and splenic veins diminished in calibre, but results less marked than those produced by application of electrodes to nerves. Experiments repeated for other spinal segments with slight or no perceptible results."

That was a summary of an experiment recounted in the sixth Still Bulletin, and Sir Henry Dale said that any physiologist reading that would say that there was on the face of it evidence that manipulations of the thoracic vertebrae and the tissues in the neighbourhood had produced a mild stimulation of the roots of the splanchnic nerve and sent impulses to the spleen. It would only be a clumsy way of stimulating the nerves to the spleen, which could be better done by the direct application of electrodes to the nerves in question. But this was the deduction which was made from that commonplace experiment, and not from scientific experimental evidence:

"Some clinical cases are reported indicating that the ninth thoracic lesion is a possible aetiological factor in certain diseases which are not very common and whose aetiology is unknown—notably spleno-medullary leukaemia."

It was entirely unscientific to suggest that because certain spinal manipulations sent impulses along nerve paths it was any evidence of a connexion between the spinal lesion and spleno-medullary leukaemia. "It is not science," exclaimed Sir Henry Dale, "it is simply nonsense."

Mr. Radcliffe's final question to the witness was: "Having studied the work shown in these Bulletins do you think it is work which would justify the pecuniary support of the Medical Research Council?" He replied, "I do not imagine that the Council would be inclined to make a grant in support of work of this kind if it knew that this was going to be the final result."

Cross-examination of Sir Henry Dale

Mr. Thorpe, in cross-examination, put to the witness Sir Norman Walker's statement that he had no objection to an investigation into the principles of osteopathy, and that the investigation might take the form of a Royal Commission. Sir Henry Dale replied that Sir Norman Walker was concerned with the whole question of the science and practice of osteopathy. He himself was tendering evidence, as he had been asked to do, on what was represented as the scientific basis of this subject. His view was that there was not any scientific evidence to inquire about.

There still remains the question of practice?—No, I have no views to express on that point. It is rather outside my field.

Would it be correct to assume that the best-informed medical opinion is available to the Ministry of Health?—I should think so.

When Sir Arthur Robinson says the proper action is to set on foot a careful scientific inquiry——?—The Ministry's statement is a statement as to what they regard as the proper action from the administrative point of view. On that matter I do not care to express any opinion, either of agreement or disagreement.

You are asked if you had found any evidence that typhoid was attributable to a lesion?—It was not any question of my own experience. The question was as to whether there was any evidence in such study as I had been able to make of these Bulletins.

Have you heard it claimed by osteopaths that typhoid was attributable to a lesion?—No.

Mr. Souttar the other day quoted from the book by McConnell and Teall. They say that the exciting cause of diphtheria is the Klebs-Loeffler bacillus, while the predisposing cause is obstruction to the circulation of the pharynx and tonsils by subdislocations of the cervical vertebrae. That is not suggesting the osteopathic lesion as the sole cause?

Before the witness could reply to this last question Sir William Jowitt said that on the second day of the hearing that had been suggested by Mr. Streeter in round terms. He had said that these lesions were the most important single factor in disease, and in answer to one specific question, "Is every disease caused by an osteopathic lesion?" Mr. Streeter had replied, "In that sense, yes." It was not very clear from the immediately preceding questions, however, what was the meaning of the qualification "in that sense."

Mr. Thorpe continued his cross-examination of Sir Henry Dale:

You have not studied all these Bulletins?—I have studied them to the extent that time permitted. I have had them in my hands for a week. I have read No. 2 *in extenso* because I felt that there my opinion was something of a specialist opinion. The others I have read through hurriedly, but I cannot claim to criticize in detail.

Are the illogical conclusions obvious to a scientific man reading Bulletin No. 2?—Speaking as an individual scientific man, that was certainly the impression made on me.

Do you go so far as to say that it is "rather nonsense"?—I would not go so far as to say that it was all "rather nonsense." A good deal of it is commonplace and unconvincing, but what appears to me to be nonsense is the implied suggestion that evidence of this kind has any bearing on the claim that the osteopathic lesion is either a determining or predisposing cause in the majority of diseases.

There are at least five registered medical practitioners who believe in and practise osteopathy. No suggestion is made against their honesty and intelligence. If they apply the test you apply in Bulletin No. 2 they ought to know at once that the whole thing is unscientific?—May I put it this way. I do not think that any medical man who was not previously convinced of the essential truth of the osteopathic doctrine would be convinced of it by studying the evidence presented in Bulletin No. 2. If on other grounds, on practical clinical observation and his general experience, he had somehow convinced himself that the osteopathic doctrine was true, I think he would read Bulletin No. 2 with that in his mind, and would get the impression that here were a number of observations which appeared to him to be compatible with the truth of the doctrine.

Then it depends a good deal upon the point of view from which you read Bulletin No. 2. Would it be unfair to suggest that a registered medical man who has spent his life under beliefs contrary to osteopathy would approach the investigation with prejudice—I do not mean conscious prejudice?—You mean a man who has spent his life practising medicine? I am rather at a disadvantage, because I have never been in practice myself. My life has been spent in research, and the whole of one's instinct, if one is engaged in research, is to read something perfectly new in the hope that one may find evidence of its truth.

Throughout your life you have been hearing of osteopathy?—I have not heard a great deal about it. During the last thirty years I have heard it mentioned from time to time.

And when mentioned it was to you a novelty? Was the investigation into Bulletin No. 2 the first research you had ever considered it desirable to make into the theory of osteopathy?—Oh, certainly.

The Scientific Value of the Bulletins

Mr. Radcliffe, in re-examination, asked whether the purpose of this evidence was to give an opinion as to the scientific value of the work recorded in the Bulletins. The witness replied that it was, and that approaching it from the scientific point of view he had found such part of it as he had studied entirely unconvincing. In reply to a question as to the effect of structural abnormalities upon the production of intestinal conditions, he said that there was a large volume of experimental and clinical evidence put forward in support of the theory that the osteopathic lesion did cause abnormalities of one kind or another of the alimentary canal, but he could only say that the evidence was not of a kind which he found scientifically convincing. In reply to Lord Esher, he said he thought he had had time to gather what was the nature of the suggested scientific basis.

If there was a medical problem of this sort would you consider under a week was sufficient time to give to a complete scientific investigation of a new theory?—Oh, no. If I were called upon to make a detailed and critical examination of the evidence put forward in these various Bulletins I think it would take several months, but I should be very sorry to spend several months on the task.

Why would you be sorry?—Because, so far as I have been able to investigate it, the evidence consists very largely of repetition of statements on supposed evidence which is entirely unconvincing.

You know about the immunity theory of osteopathy, that if you keep the body in a proper condition you are not liable to catch disease?—That is not only an osteopathic theory, it is a generally accepted medical theory.

After some further questions Sir Henry Dale asked whether it was being suggested that the National Institute of Medical Research should devote a long period to the investigation of the allegation that an osteopathic lesion altered the resistance of the body to infection. He did not think any responsible research institute could possibly undertake such an investigation unless there was a reasonable body of prima facie evidence, not merely evidence as to a supposed fact, but evidence as to the suggested mechanism.

Lord Esher: Does not the medical profession regard the fact that people are cured by a thing as prima facie evidence of its value?—I think the statement that people are cured by a thing involves a prima facie assumption.

Of its value?—No; the statement that the cure is the result of the treatment involves an assumption.

But an assumption that is not worth examining?—Certainly it is worth while if the evidence in favour of the assumption justifies such examination. But if a new assumption with no apparent rationale, with no facts based on physiology, pathology, and medicine, is produced, it seems to me that the onus of providing the evidence in favour of the assumption is on those who put it forward. What I am suggesting is that no such bit of evidence in favour of the assumption itself has yet been produced to justify the expenditure of valuable time and money on medical investigation of its truth.

Lord Elibank: Are you a member of the Medical Research Council?—No; a servant of the Council. I am director of the central research institute of the Council.

Supposing, as was indicated in Sir Arthur Robinson's evidence, the Medical Research Council were asked to set up a body to inquire into osteopathic theory and practice, would you have anything to do with the selection of the personnel of that body?—I should not suppose so. The Council might or might not ask my advice; if they did I should be obliged to give it.

If they asked your advice they would be asking the advice of someone who was prejudiced against osteopathy?—I cannot admit that. I am not prejudiced against osteopathy. I have started with a perfectly open mind, or with a prejudice as a scientist in favour of something which goes contrary to current tradition, and it has been a disappointment that I have not found any evidence convincing to me.

Yet in the very short time you have examined this subject you have not thought it worth while to examine into the results of the practice of osteopathy?—That is outside the particular range of evidence which I was invited to give to the Committee. My only connexion with the osteopathic theory has been that I was asked to express an opinion as to the scientific value of the evidence put forward in its favour. That I am willing to do. As to investigating the practical results of osteopathy, I have had no opportunity.

But is it really fair to look at any subject, whether medical or surgical, merely from the point of view of theory, without looking at the results?—Not at all.

Would you accept a medical theory as correct until you had attempted to obtain results?—I have not attempted to criticize the practical results of osteopathic treatment. I have been asked to express an opinion as to the scientific value of the experimental evidence put forward, and I have done so.

If you carried your investigations further and examined the practice of osteopathy and the results obtained from it, in spite of your views about the theory after this very short examination, you might be able to change your mind?—I might indeed, but, if I may say so, such an examination (a clinical examination on patients who had been treated by osteopaths and were said to have been cured) would be outside the range of my expert knowledge. I am not a practitioner of medicine and have had no clinical experience.

Then you do not disagree with Sir Norman Walker when he says that he would be quite in favour of setting up a Royal Commission in order to investigate the whole principle

(both theory and practice) of osteopathy?—I have not expressed any disagreement with Sir Norman Walker on that point, only that if an investigating body of any kind is to be set up I do not think the evidence tendered in *The Scientific Basis of Osteopathy* would justify the expenditure of public money on an investigation on that alone.

And you say that without any knowledge of the practice of osteopathy?—My statement is simply related to the experimental basis on which I am giving evidence. I express no opinion as to the setting up of a Royal Commission to investigate the practice of osteopathy.

This concluded the evidence brought before the Committee.

The Question of Further Inquiry

Mr. Radcliffe said that those were the witnesses on behalf of the Royal Colleges and of the medical professors and teachers whom he had to tender. The position, as he understood it, was that the Bill was being no longer promoted. If all that would happen was its withdrawal he need not trouble their lordships with further speech, but if some recommendation was to be asked for from the Committee in favour of an inquiry of some sort or a Royal Commission, then he must ask leave to tender the rest of his evidence.

The Chairman (Lord Amulree) said that technically the Bill had not been withdrawn. The Committee would have to report.

Mr. Radcliffe said that it would satisfy him if their lordships said that there was to be no recommendation of the kind he had indicated.

The Chairman said that the Committee had not considered the matter. They could not express any opinion at the moment.

Mr. Radcliffe asked whether or not the Committee desired to hear any further evidence as to the propriety of another public inquiry.

Mr. Thorpe said that the immediate question before the Committee was whether their lordships should report the preamble of the Bill as approved or not. He had been so bold as to add that in the exercise of their discretion they might be good enough to consider whether the evidence they had heard justified them in making any further recommendation. In his knowledge of parliamentary practice it was unprecedented for a Select Committee to say at this stage whether they were going to make such a recommendation. The only issue before their lordships was the preamble. It so happened that the Ministry of Health and other witnesses had indicated a certain course. His learned friend could not call evidence now as to whether or not their lordships should exercise their discretion in a particular way.

Sir William Jowitt, speaking from a longer experience of parliamentary practice than either of his friends, took an analogy from the criminal courts. If a defendant's case was stopped half-way through by the court it could only be on the assumption that he had a complete win; if his victory was to be in any way qualified he had a plain right to go on calling his evidence and to present the whole of it. If their lordships said they wanted to hear no more evidence, be it so—they all knew what was involved by stopping the evidence.

The Chairman said that the Committee had not stopped any evidence: Mr. Thorpe, at the opening of that sitting, had expressed certain views on the future of the Bill.

Sir W. Jowitt said that he understood their lordships had intimated that they wished only to hear the two witnesses who had just given evidence.

Mr. Thorpe said that their lordships had expressed a desire to hear these two witnesses. His learned friend now intimated that he was going to call some further evidence. On what issue?

Mr. Radcliffe said that the Bill, as he understood, could not be withdrawn except by consent of the House. If the Bill was still before their lordships he could not close his case without calling more evidence. He had gathered earlier in the day that the Bill was not to be proceeded with.

Mr. Thorpe said that if their lordships reported that the Bill should not proceed, its withdrawal by consent of the House was a mere technicality.

An "Inference"

The Committee deliberated in private a second time, and on the public sitting being resumed Lord Amulree said that the Committee adhered to its decision to hear no further evidence.

Mr. Radcliffe: There again, I say this with all respect, I was prepared to address your lordships on the Bill at large. If there is a possibility of your lordships reporting favourably I must make my speech. Only an intimation from your lordships that that could not——

The Chairman: I think you might go on inference, Mr. Radcliffe.

Mr. Radcliffe thereupon said that he would address their lordships no further on that point. He continued by pointing out that the Bill was promoted to secure the registration of osteopaths and to provide for a board of control and separate examination. To that on certain grounds his clients thought it right to enter opposition, among other grounds being this one, that they thought they could satisfy their lordships that there was no proper scientific justification for the theory of osteopathy. As he understood it, the promoters of the Bill no longer wished that its provisions in any form should be reported on favourably by their lordships, and if that was the view put forward by the promoters he asked the Select Committee to accept that position and report in favour of the Bill not being proceeded with. Whether or not there were other steps that it might be right to take in order to establish the position of osteopaths in this country was a matter that, in view of their lordships' decision, it would not be right for him to pursue. It might be that the Minister of Health, if he had the discretion and power to do so, would think it right to institute or promote some independent inquiry of his own. That was a matter for his own discretion which he would no doubt exercise in full, but counsel urged that their lordships, in reporting themselves in favour of the Bill not being proceeded with, should give no expression which might be taken to mean that the osteopaths had somehow made out a prima facie case in favour of having the practice or theory of osteopathy inquired into by a public body. That issue had not been fully presented to their lordships, and he trusted that they would not add anything which might seem to prejudge it.

Mr. Dickens said that the British Medical Association would not have closed their case in opposition to the Bill had they not been aware that a number of scientific witnesses were being called. Naturally he accepted their lordships' decision not to hear any more witnesses, but he hoped that in considering what Mr. Radcliffe had said they would bear in mind that the scientific gentlemen who had, practically at the invitation of the Committee, examined the evidence contained in *The Scientific Basis of Osteopathy* which was put before the committee by Dr. Macdonald had not completed their evidence.

The Chairman said that they could not go into the question of the other witnesses who would have been called.

Mr. Thorpe, for the applicants, said that his learned friend had rather assumed that their lordships would make some recommendation on the lines indicated by the Ministry of Health, and that this would imply that the osteopaths had made out a prima facie case. He wanted to dissociate himself from the implication that if they threw out the Bill and made no recommendation it must follow that the osteopaths had made out no case. It would be most unfortunate if any decision of the Committee were to be advertised as a victory for one party or the other. The matter had not been completed from the scientific point of view, and, with all respect, their lordships would not be able so to deal with it. In his submission any recommendation would only be in the public interest, and he hoped he was right in saying that it would not reflect on either party or give either party the right to say that they happened to have won on an issue that was still open.

The proceedings then terminated.

The Select Committee had sat for twelve days, and had heard twenty witnesses. Eight were called by the applicants for the Bill (these including five grateful patients), and ten—all members of the medical profession—by the opposers. Two others—namely, the representative of the Ministry of Health and the Registrar-General—took a detached standpoint, and were cross-examined from both sides. When the inquiry ended abruptly several other scientific witnesses, among them Professor E. H. Kettle and Dr. H. L. Tidy, were prepared with their evidence. At times as many as ten counsel were in attendance.

BRITISH EMPIRE CANCER CAMPAIGN

The fifty-fourth meeting of the Grand Council of the British Empire Cancer Campaign was held at 12, Grosvenor Crescent, London, on April 8th, with the president, Lord Reading, in the chair.

A grant at the rate of £350 per annum for the year 1935 was made to Sir Leonard Hill for the services of Dr. T. Reiter whilst continuing his research work on short-wave therapy in the laboratories of the St. John Clinic and Institute of Physical Medicine.

A grant of £1,000 per annum for two years was made to the North of England Council of the Campaign, to be placed at the disposal of Professor W. E. Curtis of the Armstrong College, Newcastle, and Dr. F. Dickens, research director of the Cancer Research Institute of the North of England Council, for the purpose of conducting an exhaustive scheme of research in short-wave therapy. It was reported that the Scientific Advisory Committee of the Campaign attaches much importance to this research and that the North of England Council had been chosen in order that Professor Curtis and Dr. Dickens with their respective teams might carry out the joint investigation at Newcastle.

A grant of £700 was placed at the disposal of the Scientific Advisory Committee for a special investigation, under its supervision, of the biological reactions of monochromatic radiations of various wave-lengths.

The Grand Council adopted the recommendation of its committees that it was desirable to continue to offer from time to time a prize and medal for the best essay submitted on a set subject concerning cancer research. It was decided also that the British Empire Cancer Campaign should award gold medals from time to time to those in the British Empire who had carried out and published contributions to cancer research of outstanding merit.

It was announced that a Central Propaganda Committee had been established representative both of the provincial centres and of the headquarters of the Campaign. One of its objects will be to isssue educational propaganda which will enlighten the public generally on the subject of the onset of cancer with a view to inducing sufferers to seek medical advice at the earliest possible moment.

It was reported that, following a suggestion by the Duke of York last year that Empire Day should be adopted as a day of national collection for the Campaign, a largely increased number of centres have undertaken, in the present Jubilee Year, to organize collections throughout the country. It is anticipated that over 1,700 such centres will be functioning in aid of the funds of the Campaign at the time of Empire Day. In the provinces, May 25th has been chosen for the majority of these collections, while in London the Commissioner of Police and the City police authorities have granted July 9th for the Flag Day in the metropolitan and City areas.

BRITISH DENTAL ASSOCIATION'S NEW HOME

The new house of the British Dental Association, No. 13, Hill Street, Berkeley Square, was opened on April 12th by Mr. Geoffrey Shakespeare, Parliamentary Secretary to the Ministry of Health. Mr. W. Graham Campbell of Dundee, the president of the association, in calling upon Mr. Shakespeare to perform the ceremony, said that just as the progress of a successful individual might be registered by his successive dwellings, so the growing usefulness of an institution might be gathered from its periodical need for larger premises. The British Dental Association began originally in lodgings at the Royal Dental Hospital; then it moved to Hanover Square, and later to Russell Square, where it had for the first time a home of its own. But the house in Russell Square had for long been too small, and now the association had sought a statelier mansion further west. He expressed the indebtedness which the association felt to the chairman of the Housing Committee, Mr. Frank J. Pearce, and to the dental secretary, Mr. W. G. Senior, for their labours in connexion with the new home.

Mr. Geoffrey Shakespeare said that the increasing importance of the association in the eyes of the profession and the public was well represented by this transmigration from Bloomsbury to Mayfair. The association had been in existence for more than half a century, but it was in recent years that dentistry had so greatly expanded and had been shown to be so vitally concerned in the health of the nation. Attention to dental health began in the maternity and child welfare centres, and was continued in the school medical service, where some of the most valuable work in the care of the teeth was being done. Out of about three million children examined during the last year for which there were statistics, 60 per cent. had dental defects needing treatment. After school age there was a serious gap, for at present there was no provision for the treatment of the adolescent. But when the individual entered national health insurance his teeth were again looked after, and since 1921 no less than twenty million pounds had been spent on the dental treatment of the insured population, this being one of the most popular and valuable of additional benefits. Mr. Shakespeare thanked the British Dental Association and the Dental Benefit Council for all that they had done in connexion with national health insurance. As the financial resources of the country improved he had no doubt that the dental service would be enlarged and strengthened.

The building having been declared open, a vote of thanks was moved to Mr. Shakespeare by Mr. George Northcroft, chairman of the Representative Board, who spoke of the ambitions of the association towards greater effectiveness in national service. The motion was seconded by Mr. Frank J. Pearce. Sir Norman Bennett then invited the Parliamentary Secretary to open the Robert Lindsay Library, in memory of the late dental secretary, who, he said, did most valuable work for the association, particularly in paving the way for the Dentists Act, 1921. The library was a happy memorial, the more so because it owed its excellence very largely to his widow, who had continued to act as librarian. Mr. Shakespeare cut a tape at the entrance to the new library, and the first of the company to enter was Mrs. Lindsay.

The new building is both dignified and spacious. On the ground floor are general and secretarial offices and a common room for members. A few steps lead down to the Robert Lindsay Library, and there is some further library accommodation in three small rooms, one of them especially fireproof, elsewhere in the building. The first floor contains a handsome chamber for the meetings of the Representative Board, and on the floor above is a council room. Galleries on the second and third floors are allocated to the purposes of a museum, and there are rooms which can be used for committee purposes.

At the last quarterly court of the directors of the Society for Relief of Widows and Orphans of Medical Men, with Mr. V. Warren Low in the chair, the deaths of three members and three widows in receipt of grants were reported. One widow had been on the funds for twenty-two years and had received in grants £1,870, and another had been in receipt of grants, amounting to £880, for eleven years. Three new members were elected. A widow whose husband died recently, left in necessitous circumstances, with two sons dependent on her, was voted £60 per annum for herself and £50 per annum for each of her sons. The expenses of the quarter were £86, and £105 was paid for grants: £820 13s. 6d. had been received from the Inland Revenue, representing the return of income tax for the year ending April 5th, 1935. The annual report of the society, to be submitted to the members at the annual general meeting on May 22nd, was read and approved. A donation of £41 19s. 7d. was received from the Bovril Medical Agency. The total membership of the society is still causing concern. Membership is open to any registered medical practitioner who, at the time of his election, is resident within a twenty-mile radius of Charing Cross. Relief is granted only to the widows and orphans of members. Full particulars of the society may be obtained from the secretary, at its offices, 11, Chandos Street, Cavendish Square, W.1.

England and Wales

King Edward VII Sanatorium

In the twelve months ending June, 1934, 294 patients were admitted to King Edward VII Sanatorium, Midhurst, fifty-one of these being readmissions, and 282 were discharged. The average waiting list has been about thirteen to fourteen in the case of both sexes, which is an increase on the previous year, especially as regards women. During the period under review the operating theatre, which had been presented by Lord Woolavington, was opened, and between February and June there were performed fourteen phrenic evulsions, two phrenic crushes. two thoracoplasties, and two minor operations. It is stated that phrenic evulsion has been of value in helping to obliterate apical cavities, and in clearing up soft infiltration areas at the apices, which, if left alone, tend to excavate. After phrenic evulsion, however, fibrosis takes place more rapidly, and the formation of cavities seems to be prevented. There has been an increase in the employment of sanocrysin after completed thoracoplasties, since it has been found to promote fibrosis. Sanocrysin has also been given to patients whose lesions were beginning to heal, but who had either a slight but persistent temperature or had tubercle bacilli persistently present in the sputum, although the clinical findings were satisfactory. Considerable work has been done at the institution on blood sedimentation. Prolonged clinical observations have led to the belief that the magnitude of the sedimentation rate represents the product of the amount of tissue involved and the rapidity with which that involvement is taking place. An exception to this general rule is seen at the onset of a pleural effusion, which gives rise to readings that have no relation to the amount of breaking down tissue. Unless complications occur, such as a spread of the disease or a secondary infection, the readings rapidly return to their former level. It is stated that when a normal sedimentation rate is found in a case of active pulmonary tuberculosis the lesion is always small ; if the disease spreads, the rate regularly rises. Isolated tests are of little use.

Child Psychology

Speaking at the annual luncheon of the Institute of Child Psychology, of which she is a director, Dr. Margaret Lowenfeld said the institute hoped to make its results available for other workers who were concerned with children—educational bodies, medical practitioners, and agencies for child welfare. During the year a wider range of medical complaints had been submitted, with good results, to the institute. Dr. J. J. Mallon declared that it was the capital sin of this generation that it had paid far too little attention to the life of the child and to the mental aspect of that life. That phase would pass, because by degrees children were becoming scarcer. Dr. Ethel Dukes, a director of the institute, appealed for help, saying that the work was being carried on under crowded and extremely difficult conditions, and that money was needed to secure adequate premises.

Dr. W. H. Lewis of Llansantffraid

Dr. William Henry Lewis of Caehywel, Llansantffraid, who has been recently appointed high sheriff of Montgomeryshire, is an ex-president of the Shropshire and Mid-Wales Branch of the British Medical Association. After graduating M.B., C.M.Ed. in 1887, he practised at Llansantffraid for more than forty years. He was placed on the commission of the peace for Montgomeryshire in 1904, and has been a county councillor and chairman of the public health and housing and the mental diseases committees. He represents the county on the Welsh National Memorial Association, the Court of the University of Wales, the North Wales Blind Society, and the North Wales Joint Vagrancy Committee.

Scotland

Edinburgh Royal Maternity Hospital

During 1934 the number of cases treated by the Edinburgh Royal Maternity and Simpson Memorial Hospital, both intern and extern, was 3,500, which was only six short of the record established in 1930. At the antenatal clinic in the Ballantyne Annex there were 17,210 visits, an increase of 1,378 over those of the previous year. At the clinic for young children, which was established in connexion with the chair of child life and health in the University of Edinburgh, there were 1,182 attendances in 1933 and 1,942 in 1934. The finance of the hospital continues to be a serious problem ; as the expenditure in 1934 exceeded the income, the reserve fund had to be drawn upon to provide £3,143. Of the total births in greater Edinburgh in 1934 43.7 per cent. were conducted in connexion with this hospital.

Insanity in Scotland

The annual report of the General Board of Control for Scotland shows that there were in Scottish asylums 147 more cases than in 1933. The total number of persons, excluding insane ones maintained at home by their natural guardians, was 19,538 on January 1st, 1934, and 19,685 at the beginning of 1935. Of these 2,807 were maintained from private sources, 16,792 from the rates, and eighty-six at the expense of the State. The general death rate for private and pauper patients in establishments was 6.9 per cent., as compared with 7.5 in the previous year. The report states that this steady accumulation of certified lunatics in institutions presents a serious problem, and causes anxiety to local authorities, because all the asylums under their management have exceeded the number of inmates which they can accommodate conveniently from the point of view of health and administration. The remedy suggested is an acceleration of the boarding-out of suitable patients under private care. Nevertheless, in certain areas, local authorities will require, at an early date, to extend their asylum accommodation. Immediate action appears to be especially necessary in the areas of Glasgow, Inverness, and Fife.

Honorary Degrees for Medical Men

At the spring graduation ceremony in Marischal College, Aberdeen, on April 3rd, with Lord Meston presiding, two members of the medical profession received the honorary degree of Doctor of Laws: Lieut.-Colonel A. T. Gage, I.M.S., and Professor J. C. G. Ledingham, F.R.S. Colonel Gage joined the Indian Medical Service in 1887 and soon became curator of the Herbarium in the Royal Botanic Gardens, Calcutta. For more than a quarter of a century he played a leading part in developing the knowledge of plant life in India, where he was director of the Botanical Survey of India. Among his other duties was the control of several important cinchona plantations, and the supply throughout India and Burma of the quinine obtained from these. Professor J. C. G. Ledingham, a native of Banffshire and a former student of Aberdeen University, was for many years chief bacteriologist to the Lister Institute of Preventive Medicine in London, and latterly has been its director. He now holds the chair of bacteriology in the University of London, and during the war he rendered important services on the Medical Advisory Committee in the Mediterranean and in Mesopotamia.

Ireland

Women's National Health Association

At the annual meeting of the Women's National Health Association, held in Dublin on April 9th and 10th, it was reported that the association's Fresh Air Fund had helped to send about 1,500 children away for a change last year. It was also reported that attendances at the Dublin babies' clubs had steadily increased during the year, and that holiday homes had been maintained during the summer months in connexion with some of these clubs, through which sixty-two families had received much-needed holidays. Speaking on the "Problem of Rheumatism" at one session of the meeting, Dr. F. J. Bach said that although rheumatism was of little consequence as the immediate cause of death, it was of outstanding importance as a cause of severe and long-standing disability, and was an industrial scourge. It was responsible for only 5 per cent. of all deaths. The cost of rheumatism to Great Britain in 1928 was shown to be £17,000,000 a year. Much of the terrible suffering and chronic invalidism so common among those who suffered from the disease was due to ignorance and neglect of adequate treatment in the early and curable stages. Rheumatic fever might manifest itself by painful swollen joints, accompanied by high fever and sweating. The patient should be kept in bed and given large doses of salicylates or aspirin, when the swelling and fever usually subsided, leaving no permanent joint damage. Rheumatic fever was the cause of nine out of ten cases of heart disease in childhood, and of nearly every case of organic heart disease occurring in the first years of industrial life. Dr. R. F. Collis said that a great number of children in Dublin to-day were dying from heart failure due to rheumatism. Something should be done for them, and he suggested that committees should be set up to go into the question internationally.

Milk and Dairies Bill

The Milk and Dairies Bill received its final reading in the Dail recently. Dr. Rowlette, in his general remarks, said that the Bill made a considerable advance in the matter of public health. Local authorities, however, would be more cordial in their administration of the measure if the cost had been borne equally out of the central fund. In the matter of administration they could not lose sight of the fact that they had an entirely new and inexperienced staff of medical officers of health. These new medical officers would have a great deal of work to do, because public health administration was in a very backward condition throughout the country. It could not be hoped that they would have the very cordial support of local authorities with regard to influence or finance, since the cost of the administration was thrown on the latter, and was not borne by the central authority.

National Baby Week, to be held from July 1st to 7th, will again be the occasion of a conference in London on maternity and child welfare, organized by the National Association for the Prevention of Infant Mortality. In connexion with the conference, lectures and visits to child welfare institutions are being arranged. Further information may be had from the Secretary, National Baby Week Council, 117, Piccadilly, W.1. The Council urges that during 1935 those engaged in cultivating and informing public opinion on matters of importance to national health should devote their propaganda to the welfare of the pre-school child, and to good nutrition of mothers and little children.

Reports of Societies

PHYSICS OF SHORT-WAVE THERAPY

A meeting of the Duchenne Society for the Advancement of Electrotherapy was held at St. Thomas's Hospital on April 9th, under the chairmanship of Dr. W. J. TURRELL, when Dr. P. BAUWENS, medical officer in charge of the electrotherapeutic department of the hospital, demonstrated to a large and interested audience the behaviour of oscillating currents in complex circuits, and went on to discuss ultra-high-frequency currents or short-wave therapy.

Dr. Bauwens said that the latest additions to the physical agents at the electrotherapeutist's service were currents of very high frequency. These were young even in the realm of physics, and their behaviour was still matter for exploration. He illustrated by experiment how, with increasing frequencies, what was known as capacity reactance of the condenser became less, the current choosing its own path according to the frequency. With rising frequencies the influence of the condenser in the circuit diminished. To put it at extremes, when frequency was at zero, as it was in the case of direct current, the reactance of the condenser was at infinity; whereas the reactance of the condenser itself became zero when the frequency was at infinity. Dr. Bauwens raised the question whether any therapeutic effects of the very high frequency currents could be ascribed in the major part to transmission of such currents by displacement across living tissues. It had been contended by many authorities that some factor other than heat production was responsible for the therapeutic properties of ultra-high-frequency currents, and a vibratory effect had been suggested as an explanation. It was Dr. Bauwens's contention that such an effect did occur, and was a function of the frequency. In the relatively low frequencies the diathermic effect was predominant, but with the higher frequencies the vibratory effect became more and more pronounced. The difference between the therapeutic effects of diathermy on the one hand and ultra-high frequency on the other was most strikingly manifested by the relative absence in short-wave therapy of appreciation of heat during administration. The effect of the diathermy current proper must be attributed to rise in temperature, which accelerated all the tissue changes capable of acceleration, but the effect of the ultra-high frequency was a vibratory one. Correct terminology had never been a strong point in electrotherapy, and with the advent of ultra-high frequency currents another opportunity for erroneous nomenclature presented itself. But what was known as short-wave therapy was really treatment by electric fields oscillating at a very high frequency. It was difficult to compute what amount of energy was absorbed during treatment in the ordinary way, but as long as a considerable amount was converted into heat it was possible to rely, within limits, upon the patient's sensations. With the advent of this form of treatment, however, the thermal limiting factor tended to disappear, and in the absence of this guide it might easily be possible to overstep the margins of safety and bring about disruption of tissues due to exaggeration of the vibratory effect. Many workers had already reported tissue damage without excessive heat formation.

The ensuing discussion turned very largely on the biophysical and biochemical aspects of the subject, but it was noteworthy for a contribution by Dr. FRANZ NAGELSCHMIDT, introduced by the chairman as, next to D'Arsonval, the originator of these methods, and one who, as far back as 1912, so exhaustively described the physics of the subject that little had remained to be added in subsequent years. Dr. Nagelschmidt stressed the point that conclusions based purely on physical experiments might be misleading from the medical standpoint, and that, having regard to the complexity of the human tissues, such results should not be adopted forthwith into medicine. He could not deny that a vibratory effect existed, but he did not think vibrations were responsible

for the therapeutic effects found with diathermy. In his view the difference between diathermy and short-wave therapy was in the depth of the changes, but both were primarily heating effects.

DEFINITIONS OF ADDICTION

The word "addict" or "addiction" in its reference to drugs is of recent usage. In the first volume of the *New English Dictionary* (1888), though the words appear, they are not used of drugs. In the supplementary volume of the dictionary (1933) the earliest reference given is from Oscar Jennings's work *The Morphia Habit* (1909), where the phrase occurs, ". . . shown by post-mortem examinations in morphia addicts."

Dr. E. W. ADAMS, who addressed the Society for the Study of Inebriety on this subject on April 9th, complained of the loose use of the word in current speech. If a man was fond of his pipe he was said to be a tobacco addict. If a nervous woman took thyroid extract with the object of inducing peculiar symptoms which would arouse sympathy among her friends, she was said to be the subject of thyroid addiction. When the charwoman kept her teapot on the hob, to refresh herself, like Mrs. Gamp, when "so dispoged," she was "addicted" to tea. Some people, said Dr. Adams, were never happy without a sweetmeat, and he was looking forward to a learned paper on the signs and symptoms of lollipop addiction. The word which had been rather suddenly adopted to describe the manias of habitual indudgence in certain drugs was derived from the Latin *addictus*, meaning assigned by decree, delivered over, bound, and hence it came to denote the surrender or dedication of anyone to a master. Bishop Patrick attributed a passage from Exodus to mean "a solemn addiction to the Master's service." All real addiction drugs, said Dr. Adams, were masterful drugs. Once a man admitted one of them into his life it, and not he, would be master. To morphinism and heroinism the term "addiction" could be applied without hesitation. The motive of a person in resorting to drugs was "the need of tempering the wind of reality to the psychologically shorn lamb." In Western countries, at any rate, the master motive was to make reality less real, or at any rate more pleasant. Hence the mark of all addiction drugs was capacity to induce euphoria. Once the habit had begun a secondary motive appeared to be responsible with the primary one for its continuance, and this led to another feature of addiction—namely, craving. A third outstanding feature was tolerance, or the gradual accustoming of the tissues to the drug, whereby the seasoned addict was enabled safely to take doses of a magnitude which earlier would have terminated his existence. This tolerance compelled the addict periodically to increase the dose in order to get the usual "kick." Another feature was the abstinence syndrome, or the occurrence on withdrawal of the drug of a distressing train of symptoms, physical and psychical, quite different from the mere discomfort experienced on deprivation of an accustomed luxury. Lastly, there was the feature of relapse, or the uncontrollable tendency to revert again to the drug after an apparently successful withdrawal. In cocaine addiction some of the criteria above mentioned appeared not to hold good. The cocainist not infrequently resorted to the drug from vicious motives, out of pure devilment, an insensate desire for a new experience, or to nerve himself for some crime. Chicago gangsters were not seldom cocaine addicts. Thus the cocainist might use his drug from anti-social motives, to intensify reality, and not, like the morphinist, to dull it. It was doubtful also whether true tolerance to cocaine existed. The cocainist, unlike the morphinist or the heroinist, on resuming his drug after an interval, could begin with the dose with which he had left off. Withdrawal symptoms with cocaine might be slight or even absent. Dr. Adams ventured on a definition of addiction:

"Addiction is a state of bondage to a masterful drug, usually, but not always, of the narcotic class, and is manifested by craving, tolerance, intense discomfort of a specialized character on withdrawal of the drug, and tendency to relapse. Its origin lies in a defect of the personality which may be of a varied kind, but is most commonly of the nature of an inability to cope with reality."

On this definition was tobacco an addiction? There were moderate smokers who could give up the habit without a pang, suffering no withdrawal symptoms beyond a slight regret. These were not tobacco addicts, they merely practised smoking; but there were "chain smokers" who used tobacco for the same reason as others used narcotic drugs—to deaden sensibility. Much the same considerations applied to that domestic drug called tea, which was, by virtue of the caffeine, not a narcotic, but a cerebral stimulant. There were no grounds for regarding ordinary indulgence in tea as a true addiction, but among certain Eastern peoples the tea habit did seem to acquire such a character. Dr. Adams referred in particular to the Tunisians, who used a thick syrupy concoction of the consistence of tar. More recently the habit had grown up in Egypt, and it was said that many of the fellaheen were pronounced tea addicts. Here the tea was a quadruple or a quintuple brew of a black liquid reduced by boiling to a poisonous extract of tannin and tea. It seemed to be an addiction *de novo*.

The question of tobacco was taken up in the brief discussion which followed. Dr. J. D. ROLLESTON confessed that he had never been able to understand why tobacco should not be regarded as an addiction, if only a *forme fruste* thereof; and Sir HUMPHRY ROLLESTON, who presided, mentioned that some smokers were perfectly happy if they had in their mouth a holder, no matter whether it contained a cigarette or not—an example, surely, of the psychopathic nature of addiction.

TRIBUTE TO TROUSSEAU

At a meeting of the Bath Clinical Society, held on April 5th, with the president, Dr. R. EDRIDGE, in the chair, Dr. J. D. ROLLESTON read a paper on Trousseau, who, he said, should be one of the patron saints of every society that called itself clinical.

After a preliminary training under Bretonneau at the hospital at Tours (where like Vulpian, the future celebrated surgeon, he assisted his patron in his investigations on diphtheria and typhoid fever) Trousseau came to Paris, where the two young men made Bretonneau's work known to the medical world. Trousseau's gradual rise to eminence until he was elected professor of medicine in the Paris faculty was then described by the lecturer, who quoted several striking contemporary descriptions of him as a man and a teacher, including the dramatic meeting at the Hôtel-Dieu with the young Dieulafoye, who won the professor's heart by an appropriate quotation from Ovid. Then followed the poignant story as related in the *Journal des Goncourt* of Trousseau's death from cancer of the stomach, a symptom of which—phlebitis of the leg—was first described in his clinical lectures as an early manifestation of the disease.

In his estimate of Trousseau's position in the history of medicine Dr. Rolleston, while emphasizing the immense debt which Trousseau owed to Bretonneau, particularly as regards his contributions to therapeutics, maintained that but for Trousseau's eloquence and power of expression rendered permanent in his clinical lectures, most of Bretonneau's teaching would have been lost. The work of Bretonneau and Trousseau was all the more important as owing to the influence of Broussais therapeutics had been reduced to antiphlogistic methods, in other words to bleeding, leeching, purgation, and low diet. It was due to Bretonneau that Trousseau advocated the treatment of dysentery by purgatives, the application of cold affusions in scarlet fever, the resuscitation of martial preparations in anaemia, the use of belladonna in constipation and enuresis, cod-liver oil in rickets and local treatment of anal fissure by injection of rhatany. The actual innovations of Trousseau were less important, with the exception of thoracentesis, which both Louis and Laennec depre-

cated, and included catheterization of the oesophagus, the introduction of medicated milks, diuretic wines, and nebulized sprays. It was also the great merit of Trousseau to have supplemented his master's teaching in emphasizing the constitutional effects of diphtheria in his clinical lectures, in which he showed that death was not always due to asphyxia from invasion of the larynx, as Bretonneau had taught, but was also caused by general intoxication. The symptoms of diphtheritic paralysis and the complication of albuminuria, which had been first noted by Wade of Birmingham in 1858, were also fully described by Trousseau.

In conclusion, Dr. Rolleston paid tribute to Trousseau's wide knowledge of medical literature of his own and other countries. As pointed out by Garrison, it was due to him that the diseases called after Addison, Graves, for whom he had an unbounded admiration, Stokes, and Hodgkin, became known to us by their eponymic names. The address ended with extracts from Trousseau's clinical lectures.

CUSHING'S SYNDROME

At a meeting of the Devon and Exeter Medico-Chirurgical Society on March 28th, with the president, Dr. F. N. SIDEBOTHAM, in the chair, Dr. CHARLES SEAWARD showed a case of Cushing's syndrome.

The patient was a woman, aged 34, who gave a history of seven years' periodic epigastric pain accentuated immediately after meals. The periods of exacerbation, lasting several months, occurred seven and three years ago respectively, and she was still suffering from a third attack, which had persisted for twelve months. Severe vomiting was associated with the attacks, and at times haematemesis, amenorrhoea, severe headaches, and considerable loss of weight were also noted. A fibrosed appendix had been removed some years ago, but routine examination of the digestive track had, apart from this, revealed no abnormality. In appearance she was of short and stout build, with a strong growth of grey hair on the scalp and a high-coloured complexion. The general distribution of hair was typically masculine, the beard area having necessitated the use of pumice stone every morning for several years. The breasts were atrophic, and hair was slightly manifest there, although more profuse from the umbilicus downward and also on the back. There was a generalized painful adiposity of the trunk and limbs, and hyperalgesia was universal from the scalp downwards and accentuated on the left side. The facial complexion was coppery red, but the limbs were pale, save that there were ecchymoses on the legs. The eyes were bright, and some degree of exophthalmos was present. Vision was poor, with diplopia on looking to the extreme right or left, and nystagmus had been noted, but not constantly. The blood count had shown haemoglobin, 122 per cent. ; red cells, 5,800,000 per c.mm. ; and leucocytes, 10,000 per c.mm. The blood pressure was 180/120 mm. Hg. Sugar tolerance was diminished (2.22 for the first hour), and there had been occasional glycosuria. The basal metabolic rate was – 27 ; serum calcium, 10.2 per cent. ; blood urea, 3 per cent. The Aschheim-Zondek test was negative, and *B. coli* were found in the urine. The cerebro-spinal fluid was normal as to pressure and constituents. Radiologically there was no definite abnormality of the pituitary fossa ; there was no evidence of bone decalcification, and no sign of abnormal shadow in the renal or suprarenal areas. For treatment radiation of the pituitary had been given in small frequent doses, but the woman had proved hypersensitive, as evidenced by increase in headache and vomiting. The question of further treatment, after a period of rest, was under consideration.

In the discussion which followed Dr. C. J. FULLER mentioned a similar case seen with Dr. HEAL, and one of even greater rarity having occurred in a man. The main features were the coppery-red complexion ; marked hirsutes ; haemoglobin, 110 ; hypertension ; polyuria, with lowered sugar tolerance ; mental depression and hallucinations. Subjectively, backache was the prominent symptom. Post mortem the pituitary gland was found to be enlarged and the seat of what was thought to be an adenoma. No abnormality was found in the suprarenals, thyroids, or thymus.

CORRESPONDENCE

The Osteopaths Bill Inquiry

SIR,—In the course of the osteopathic inquiry before the Select Committee of the House of Lords Dr. Kelman Macdonald told Lord Dawson that he could produce certain documents which together constituted what he regarded as the proof that osteopathy was founded on a scientific basis. He fulfilled this undertaking in an unusual way, putting in the documents he had referred to in volume form, with a foreword by himself. In this foreword he took occasion to embody some drastic criticism of evidence which had been given by medical witnesses subsequent to his own. These remarks of his were therefore placed officially before the Select Committee at a time when there could be no opportunity of cross-examining him upon them or of making any comment. One would have supposed that this proceeding was so irregular and obviously unfair that it might have been ignored by the members of the committee—perhaps it has been.

In your admirable report of the sittings of the committee, however, you make a quotation from Dr. Macdonald's foreword, in which he says with regard to my evidence: "It only goes to show that Sir Henry Brackenbury does not know what osteopathy is. How many more times have we to point out that manipulative surgery is not osteopathy?" In view of this I think some comment is justifiable, and perhaps worth while.

I heard the whole of the evidence of the osteopathic witnesses. I have read a number of osteopathic books of accepted authority. I agree that the description of osteopathy in the memorandum to the Bill, and the new definition proposed to be inserted in the Bill are alike vague and indistinctive. I agree, further, that witnesses on both sides have used the words "osteopathy" and "osteopath" with varying connotations. But I have now no misapprehension as to the claims that osteopathy is making, nor as to the main principles which it is officially declared to hold. Dr. Macdonald and Mr. Streeter made these admirably clear, though they could not suggest a satisfactory definition. The two main principles are: (1) that the predisposing or exciting cause of all disease is the presence of an "osteopathic spinal lesion," (2) that the body contains within itself all that is necessary to cure disease. The claim is that, true to these principles (or really untrue to them in the case of drugs), drugs should occupy a very minor place in therapy, and that in every case spinal manipulation to remove the lesion is the correct treatment, either to prevent or to ameliorate or cure illness.

It is, of course, clear that there is no accredited evidence whatever that either of these main principles is true. All scientific medicine, all biological knowledge, all biochemical investigation prove them to be false. Here, however, I am not concerned with their truth. My object is to make it clear that Dr. Macdonald's accusation that I confound osteopathy with manipulative surgery, and that I do not know what osteopathy is, is without foundation. Alas! I have learnt it from his own mouth.—I am, etc.,

London, N.W.3, April 12th. HENRY B. BRACKENBURY.

Sodium Evipan

SIR,—The world of surgery has reason to be grateful to Mr. I. Lloyd Johnstone for his frank and well-balanced article on the above subject in your issue of April 13th. At a time when some surgeons and anaesthetists appear to be losing their sense of proportion in this matter, when the latest stunt is taken up enthusiastically by the fashion-

able world irrespective of any danger, disadvantage, or contraindication it may possess, it was refreshing to read an article in which it was admitted that this drug possesses both advantages and disadvantages. Up to the present, the only opinions on evipan which have received publicity have fallen into two groups: those suggesting that the drug is indicated and desirable in any and every case, and those stating equally as emphatically that the drug was never indicated in any circumstance.

As an anaesthetist who tries to apply physiological principles to his specialty, I was much impressed by Dr. Johnstone's article. He states that "there is some value in the drug," and with this opinion I agree. Induction by it is pleasant, quickly accomplished, and free from psychic trauma. But the spectacular nature of its action should not blind us to its many disadvantages.

In a recent paper which I read to a dental society, and which is now in the press, I gave it as my opinion, based on its use in over a hundred cases, that the use of sodium evipan as a total anaesthetic should be almost entirely confined to cases in which other anaesthetics are contraindicated. This will practically only occur where diathermy or other electrical apparatus is being used in the mouth. The toxic nature of the drug when employed in large quantity, the muscular spasms and twitchings (which, together with the persistence of mucous membrane sensitiveness, would appear to contraindicate its use in ophthalmic surgery), the uncertainty of its action, the widespread and unpredictable variation in individual susceptibility, preclude its use for most of the purposes of major surgery. In very few cases indeed has it any advantage over the well-tried combination of nitrous oxide, oxygen, and ether.

Mr. Johnstone mentions the difficulty of judging the dosage required when following the usual technique of injecting an arbitrary quantity of the drug, and then withdrawing the needle. This is indeed an unscientific method of using an anaesthetic of the potency of sodium evipan. It would appear to be more reasonable to give the drug according to the method devised abroad,[1 2 3] whereby the drug is given from a syringe or burette through one limb of a two-way tap, through the other limb of which glucose saline can be given. In this way the anaesthetic can be given in small quantities throughout the operation, the needle being kept patent by the flow of saline.—I am, etc.,

London, W.1, April 12th. R. BLAIR GOULD.

Ether Convulsions

SIR,—The commentary by Mr. F. W. Willway on his report of a case of ether convulsions (*British Medical Journal*, April 13th, p. 764) is, I think, open to criticism. W. N. Kemp, although too sweeping in his conclusions, is right in suggesting that there is an "ether convulsion diathesis." It is well known that in about 85 per cent. of cases in which ether convulsions occur the following factors are present:

1. The patient is under 20 years of age.
2. The patient is suffering from an unusually intense toxaemia as a result of the septic local lesion present.
3. The weather is hot, and hence the temperature of the operating theatre is high.

The determining factor in the production of ether convulsions under these conditions is *deep* ether anaesthesia. Kemp is too sweeping in suggesting that such a patient, once having had ether convulsions, will develop them if reoperated on at a subsequent date. Given the same diathesis, convulsions will occur only if the patient is *deeply* anaesthetized with ether. Mr. Willway's own case provides an excellent example of this fact.

To the only recorded case which Mr. Willway could find of a subsequent administration of ether with safety to a patient who previously had had ether convulsions, I can add one from my own practice.

On August 4th, 1931, I anaesthetized a boy, aged 16 years, suffering from an extension of an acute osteomyelitis of the femur. A week previously, at the first operation, he was anaesthetized by a house-surgeon, and developed severe, but happily not fatal, ether convulsions. The ether used was examined by Mr. Butchers, who reported that no aldehydes or peroxides were found. After progressing favourably for a few days the patient had a "flare-up," and further exploration was deemed necessary. At the second operation anaesthesia was maintained by ether administered with oxygen through Shipway's apparatus, and was entirely uneventful.

The patient subsequently made a complete recovery. The last point is noteworthy, as, unfortunately, the occurrence of ether convulsions is so often a grave prognostic index of the severity of the existing disease.—I am, etc.,

Manchester, April 13th. H. K. ASHWORTH.

Cheiropompholyx

SIR,—Your recent editorial on cheiropompholyx in the *Journal* reminds me of a duty unperformed—namely, the publication of what I believe to be the cure of the condition.

My first acquaintance with cheiropompholyx was made while I was a resident hospital pupil on the surgical side, before the days of rubber gloves, when almost the whole day was spent doing dressings and the bare hands were constantly being soaked in corrosive sublimate solution. I remember, well towards the end of my term of residence, spending a good part of the night standing with my hands and forearms dipped in jugs of cold water to ease the horrible itch, and when I could crawl into bed having to pack between each of the fingers to keep them from being stuck together in the morning. I finished my term with cellulitis and multiple incisions in both forearms, and after a short time at home spent six weeks as an in-patient in a skin hospital before I could go on with my work. While in the skin hospital I worked out the possible percentage of successes in thirteen different forms of "patience," basing my findings on actual games played by myself, the total number of which ran into the tens of thousands. These games were generally played at night while I walked round and round a small table on which the cards lay, the demon pruritus stalking behind me ready to sink his claws into me if I sat or lay down for a moment.

I have had many attacks since and would have it still if I did not know how to deal with it. Being anxious to do surgery I gave a great deal of thought, took the advice of several skin specialists, and tried numerous remedies to discover, if possible, how to control the condition. It was manifest in my case that it was the antiseptics that brought it on. Gradually I classified these into the most and the least irritant to my skin. I found that biniodide of mercury and cyllin were infinitely less irritant than perchloride of mercury and lysol, so that nowadays the former are the only antiseptics which I allow to touch my skin. Incidentally, picric acid is about the most irritant chemical that I could use on myself, though plants of the Primula family cause me no trouble. In the course of my investigations I found that when I punctured one of the small vesicles that form in the early stages of the condition and allowed the fluid exudate to touch litmus paper it proved to be intensely alkaline. My first idea from this fact was that Nature was concentrating the alkalis in my skin to neutralize some acid irritant, and I did my best to help by using alkaline lotions such as borax, sod. bicarb., etc. The result was that I aggravated the condition. Then I thought that perhaps there was too much alkali in the skin, and that neutralization of this with acid

[1] *Presse Méd.*, 1934, 668.
[2] Ibid., 1934, 1050.
[3] *Edinburgh Med. Journ.*, November, 1934.

might help. So I tried dilute mineral acids. The result was immense and prompt improvement and relief. I found that any of the mineral acids acted well, and that my skin was curiously tolerant of acids. If, however, they were applied too strong they caused a certain amount of desquamation afterwards. I found that if necessity compelled me to use perchloride of mercury on my hands, and I was able to get some dilute acid applied to them inside a few hours, and to keep them acidulated for a day, the otherwise inevitable attack of cheiropompholyx was prevented. Later I found that vinegar and fresh lemon juice were equally effective and less injurious to the superficial layers of the skin, and now I always use and recommend fresh lemon juice.

In my experience cheiropompholyx always runs a very definite course. It invariably follows the application of an external irritant, though when it is present at one site it may appear at another site to which the irritant has not been applied. There is a period of twelve to twenty-four hours' "incubation," in the latter part of which time itch and discomfort are felt. Then the "sago-grain" vesicles are felt in or under the skin. Some swelling is always present, though there may be no redness visible. The burning itch is a marked feature. This lasts for about two days, and the extent and intensity depend on the severity of the application of the irritant. Sometimes there are only small patches of the vesicles between the fingers, but sometimes the whole fingers and palms may be involved, in which case it is very difficult and painful to open and close the hands. Gradually the irritation dies away, the swelling disappears, and the superficial layers of the skin with the coagulated contents of the vesicles peel off, leaving a very thin, shiny, red, delicate skin behind, which cracks very easily and takes some days to strengthen and thicken. The whole course occupies about ten days. All this is, of course, provided that the external irritant is not again applied. If there is a continuous application of the irritant a general eczematous condition is produced, showing all sorts of manifestations.

The treatment I advise is bathing in water as hot as can be borne for a considerable time, using a mild, unirritating soap of any sort. The heat of the water seems to concentrate all the itch of the next few hours in a few minutes. When the itch ceases to be felt the parts are dried by pressure, not by rubbing. Then some fresh lemon juice is gently rubbed into the skin and allowed to dry in. If the condition has progressed so far as to produce solution of continuity in the superficial layers of the skin the lemon juice smarts very sharply, but after the hot bathing and acidulating the affected part feels amazingly comfortable, and the patient will be able to sleep for some hours. If the acid becomes neutralized by the alkaline secretion of the skin discomfort begins again. The simplest test to discover whether more acid is needed is to touch the skin with the tip of the tongue: if no acid is tasted it is time for another application. The part is more comfortable without dressing of any sort, unless the weeping is so copious that the clothes are wet by it. After applications of the lemon juice it is wonderful how quickly the weeping stops. If absolutely necessary, a dressing of Lassar's paste, without any salicylic acid, may be applied for a few times.

My opinion as a sufferer from the complaint is that cheiropompholyx is a dermatitis produced by an external irritant in a person with an allergic diathesis to that particular irritant, and that it can be cured and prevented by keeping the reaction of the skin acid.

The commonest form of industrial dermatitis here is perhaps baker's itch. When a man who suffers from this complaint consults me I advise him, after his attack is cured by the above treatment, to adopt the following routine each day before going to, and after leaving, his work. Wash the hands and forearms in hot water and soap. Dry carefully and rub in freely some fresh lemon juice. When this has dried in completely, if necessary being assisted by a little heat, rub in thoroughly a little plain lard. If this is thoroughly and regularly done he need not be afraid of handling the flour freely.

—I am, etc.,

Balfymena, April 3rd. J. ARMSTRONG, M.D.

Tuberculosis in Home-Contacts

SIR,—The above title, under which Dr. G. Gregory Kayne's interesting paper appeared in the *Journal* of April 6th (p. 692), is surely too wide for the subject-matter therein contained. His paper deals exclusively with infants and young children under 5 years, whereas tuberculosis is frequently found in adolescent and adult home-contacts. I am aware that some writers have ascribed the manifestation of tuberculosis at any age to the reactivation of an infection occurring during infancy or childhood, but there is, on the other side, much evidence in favour of the view that contact infection may occur at greater ages.

In a paper (*Tubercle*, xi, II, 493) dealing with contacts of all ages, published some years ago, I reported: (1) that in 15 per cent. of cases accepted after full investigation as suffering from pulmonary tuberculosis, instances of secondary cases occurred in the household; (2) that the average interval between the discovery of the primary and secondary cases was three and a half years. Important as is the subject of the fate of young children in tuberculous households, it is desirable not to take too narrow a view of the age incidence of tuberculosis in home-contacts until the view that all tuberculous disease is a manifestation of infection occurring under 5 years can be proved.

—I am, etc.,

Tuberculosis Dispensary, Leigh, Lancs, April 7th. GEORGE JESSEL.

Treatment of Diphtheria

SIR,—I have read with great interest and appreciation the article on this subject by Dr. Alex. Joe, appearing in your issue of April 6th (p. 711). In York we have suffered during the past three years from a severe epidemic of the malignant type of diphtheria, and as our case mortality has been reduced from about 12 per cent. to under 5 per cent. by certain measures which are either omitted from Dr. Joe's article or not prominently mentioned, I trust I may be forgiven for making certain comments.

In the first place, in regard to antitoxin, I agree in general with his dosage, except that I would regard 30,000 units as a minimum when there is clinical evidence of diphtheria; I have not found more than 60,000 units of value, even in an adult. I would also stress the fact that a negative swab in the presence of clinical diphtheria is to be completely ignored, and that it is criminal in such cases to wait for the result of a swab at all.

In the second place, in regard to heart failure, Dr. Joe says that "every drug with a reputation as a cardiac stimulant has been employed, but with little success." This is surely a counsel of despair. The list he then gives fails to include what is, after all, recognized as the outstanding heart stimulant—digitalis. I know the theoretical inadaptability of a drug such as digitalis, acting apparently only on the nervous mechanism of the heart, to a heart suffering from damage to the actual muscle. None the less, with certain provisos, I have found that it will very largely minimize or prevent the deaths from heart failure. It must be given early, before the heart

shows signs of failure ; and it must be given in every case, as the heart will often fail unexpectedly in comparatively mild cases. Consequently, for the last two years I have had every case of definite diphtheria admitted to the York Isolation Hospital put on to a mixture of digitalis and squills (another valuable and much-ignored heart stimulant), and also given calcium, either by the mouth or intramuscularly. The above procedure has lessened the incidence of heart failure ; and it has completely prevented the occurrence of sudden death during convalescence, of which two cases had previously occurred within a short time.

Another heart stimulant, which is mentioned in the list of those tried and found wanting, is camphor. Now I have come to regard camphor, given in oil intramuscularly, as the one sure and certain immediately acting heart stimulant we possess. Ether acts, but is evanescent. Brandy eventually fails, especially if the patient is sick ; but in cases either admitted late in the disease, or in which digitalis is not keeping the pulse reasonably steady, and especially with sudden onset of signs of cardiac distress, I have found camphor act like a charm. Moreover, its effect lasts for a number of hours. I use it as required, in some cases four-hourly, some six-hourly, often only twice a day, and sometimes the one injection in emergency.

In the third place, in regard to toxaemia. This was for long the fatal condition which baffled us in York, and continued to cause many deaths at about the end of the first or the second week, for some time after we felt that we had the cardiac complications in hand. I eventually found the solution in the administration of pituitrin ; but it must be begun before the actual signs of toxaemic shock appear. So in every severe case, when there is extensive membrane or much glandular involvement and a high temperature, I now give 1/2 to 1 c.cm. pituitrin intramuscularly, once, twice, or four times in the twenty-four hours, and continue this until well into the second week. It has been remarkable how, since the institution of this procedure early last year, there has been an almost complete absence of those cases which simply fade away with sunken grey faces, no pulse, and all the appearance one associates with extreme shock. Brandy too, I notice, is not mentioned by Dr. Joe for this. I have found it valuable, both by the mouth and intramuscularly.

I agree with Dr. Joe's finding that post-diphtheritic paralysis is difficult to treat, but I notice he omits alcohol. I have found port wine and other such stimulants, even in children, give apparently valuable results.

Another comment I have to make is on the question of anaesthesia for tracheotomy. These patients are usually almost, if not quite, unconscious. At the most, a local anaesthetic is all that is really necessary. Only on one occasion was I persuaded, against my judgement, to give a whiff of chloroform. At the first breath the patient ceased to breathe, and died at once. I shall not repeat the experiment.

With the above exceptions, I should like to endorse Dr. Joe's authoritative and valuable article.—I am, etc.,

York, April 12th. J. C. LYTH.

The Climacteric

SIR,—I am grateful to Dr. Hilda Weber for her interesting reply (April 6th, p. 736) to my letter of March 23rd, for she has brought out the fundamental fact underlying the problem of the psychical disturbances of the menopause—namely, that the woman who is affected in this particular way has been potentially psychopathic, and that the endocrine imbalance is "the spark which fires the train." The climacteric is, as she says, ultimately a physiological process, but when this type of woman, which one can learn to recognize in her earlier life, arrives at this time of her career the process has to be labelled pathological, and cries out for treatment. I am no psychiatrist—though I rather closely observe the personality of the many women patients that pass through my hands yearly, and it is perhaps rash to cross swords with a specialist of Dr. Weber's calibre—but why should not we strive to extinguish "the spark which fires the train" at its kindling, rather than laboriously attempt the shoring up of the structure or its rebuilding, which mental structure has seriously settled or perhaps been even blown up by the explosion?—I am, etc.,

Dover, April 8th. G. E. BELLAMY, M.R.C.S., L.R.C.P.

Radium Policy

SIR,—"After the years of experience and profound thought" that Dr. Malcolm Donaldson has devoted to the cause of cancer, it seems a trifle out of place that he should condemn the very humble efforts that we are making in Kent towards the good cause. In the second paragraph of his letter (March 30th) he conveys the impression that radium is "concentrated into a comparatively small number of centres," and that we are doing something very unusual. This is, of course, incorrect. There are few hospitals of importance in the country which do not possess or utilize this essential to the treatment of cancer.

Paragraph 3 is agreed to in principle, but the plan is unpractical and idealistic. The counties may be "parochial," but some of their cancer cases either will not or cannot "concentrate." Do not these patients deserve the very best that we can do for them? This paragraph is devoted in part to a criticism of my personal knowledge of radium therapy. I do not know where I have laid claim to any superlative knowledge, but many years of experience in London, combined with observation of the radiotherapeutic work done by surgical colleagues, has convinced me that a good county hospital with "even a small packet of radium" can do better work for cancer than when it lacks that essential. So far as I am concerned, this letter terminates a correspondence that leads nowhere.—I am, etc.,

Littlestone, Kent, April 4th. L. BATHE RAWLING.

"Cancer and Causation"

SIR,—In a private controversy with the late Professor Shattock I dared to say that some knowledge of general biology would be useful in settling the question discussed. He thanked me gravely for indicating to him a desirable line of study. I fear that many pathologists, without his sense of humour, are as little inclined to study biology seriously. How else, indeed, can Professor Blair-Bell say that cancer as a biological phenomenon "of some kind" is a very old notion, and seem to think a mere guess of that order is of any value? What, then, would a sound biologist take as a proof or reasonable demonstration of such a thesis? Since the activities of the epithelia were in question, he would surely expect the phenomena to be examined from the points of view of all the main biological sciences, such as embryology, physiology, pathology, normal and morbid histology, immunology, and even general zoology. If any viable hypothesis or theory ever emerged from such a cross-examination there is little doubt that it must be biologically sound.

I may be forgiven for believing that something actually did come through in *Malignancy and Evolution*, in spite of Professor Blair-Bell holding it against me that I have

not so far any actual research to my credit. But why should I do any when I had the results of hundreds of honest workers to examine and co-ordinate? Among these I included his own views of chorion epithelioma and the chorionic trophoblast, which I was glad to note coincided with my own, expressed some years previously. I believe further consideration will enable Professor Blair-Bell to see that we are on the same side. If so he will presently recognize that there is no " chief contention " in my book, and, therefore, that Mr. Sampson Handley could not have said it was fallacious. The senior surgeon of the Middlesex Hospital is a busy man and a great worker, and can be excused for missing one of my subsection headings: " Local Malignancy a Local Failure." Any disagreement between us is only apparent.—I am, etc.,

London, N.W.3, April 14th. MORLEY ROBERTS.

Fibrositis in General Practice

SIR,—On reading the very interesting article on fibrositis, by Dr. Maxwell Telling, in your issue of April 6th (p. 689), several questions occurred to me. (1) Is there a comprehensive pathology, or are pathological details merely assumed? (2) How large a proportion of cases are caused by so-called strain and due to rupture of fibres caused by some unaccustomed movement or effort?

In discussing treatment Dr. Telling certainly refers to massage, but he makes no reference to prophylaxis. To me it seems that regular daily practice of physical culture may supply a method of preventive treatment. It can be carried out without assistance or apparatus, occupies little time, ensures daily full contraction of most muscles, and free movement of joints. In this matter of prescribing exercise our profession has laid itself open to criticism. It is not enough to say, " Take exercise." The kind and quantity should be specified in detail. In order to do this the physician ought to know the exercise value of the various sports and pastimes, while he must have at his command a knowledge of physical culture methods.—I am, etc.,

York, April 10th. P. MCBRIDE.

Birth of a Chimpanzee

SIR,—In your report of the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, held on March 15th (*Journal*, April 6th, p. 729), an account is given of the birth of a chimpanzee at the Zoological Gardens, London.

I am able to add a little to the ante-natal history of this case, as I was fortunate in being enabled to perform an Aschheim-Zondek test with urine from the mother about one month (January 18th) before the birth. This was negative microscopically and on microscopic section. A further test was performed a fortnight later (January 31st). This showed a well-marked Reaction I (uterine enlargement in the test mice). Reaction II (haemorrhagic points) and Reaction III (presence of corpora lutea) were, however, still absent.

My interest in the chimpanzee's response to the Aschheim-Zondek reaction dates from the pregnancy of " Betty " of the Bristol Zoological Gardens, the mother of " Adam," the first chimpanzee to be born in captivity in Europe. Adam was born on May 9th, 1934. In March and April, 1934, Betty's abdominal tumour and history of amenorrhoea suggested pregnancy, so I was asked to test an early morning specimen of her urine: this gave a negative result. In spite of this, the authorities still believed in the presence of a pregnancy, and I was asked to try again, but the Aschheim-Zondek reaction was again negative (April 27th, 1934). However, the reaction from a specimen collected five days before the birth (May 4th), although negative to the naked eye, showed corpora lutea in the microscopical section: this result was unfortunately not known until after the arrival of Adam. A fourth specimen collected one day post partum was again negative.

At the Bristol Zoological Gardens all pregnant apes are given calcium. This was given to Betty in the form of kalzana as soon as the pregnancy was suspected. This probably helped in making her pregnancy uneventful.—I am, etc.,

Bristol, April 11th. MABEL F. POTTER.

Vegetative Balance and Chronic Disease

SIR,—Dr. F. W. Broderick's letter in your issue of April 6th will delight those who have studied the acid-base equilibrium in chronic disease, whether they think in terms of H-ion concentration, the Ca to P ratio, or in terms of vagal and sympathetic tone. The whole correspondence, however, seems to neglect the early work of Ellis, who was among the first to show how such considerations bear on treatment and, at the Bath conference, particularly urged the importance of considering the acid-base equilibrium in the treatment of chronic rheumatism.

For some years I have examined the relation of free to fixed acid in the urine of all my rheumatic patients, and, particularly in the rheumatoid group, I have obtained valuable indications. These cases show, when four urines in the day are examined and charted, a characteristic curve, which tends towards the normal as the clinical picture improves. When the opposite occurs the curve becomes increasingly irregular. Recently I have had to deal with an early case of Paget's osteitis, which seems to be now accepted as identical with the osteodystrophia fibrosa of animals. It has been shown by the veterinarians that this latter condition is due to an excessive ratio of P to Ca in the diet, and that it is curable by increasing the Ca intake. To my gratification, not only did the symptoms steadily disappear on a diet in which Ca and P were carefully balanced, but the *x*-rays show, after six months' treatment, marked increase in bone density and a tendency for the bone to resume its normal shape and volume.—I am, etc.,

London, W.1, April 7th. G. LAUGHTON SCOTT.

Treatment of Hammer-toe

SIR,—Mr. Brittain quite rightly points out the advantages of Mr. Higgs's spike operation in cases of hammer-toe. This operation is practically always followed by a bony ankylosis, and consequently by complete freedom from pain. The more commonly performed " excision of the joint " may result in a painful toe, due to the presence of a fibrous ankylosis.

But while the spike operation is easy to perform when the deformed toe is long and thin, yet it may be almost impossible of execution in a short, fat toe. Further, in cases of claw toes, numerous toes may require straightening; it may then be advisable to do the quicker and less tedious " excision " of the affected joints, and so avoid more than one anaesthetic. But, whichever the operation, I have never found it necessary to use a special splint to maintain the correction of the deformity. After the spike operation a splint is quite superfluous, while in cases where excision has been performed the need of a splint suggests the removal of insufficient bone.—I am, etc.,

Hove, April 8th. J. M. TURNER, F.R.C.S.

INSTITUTE OF MEDICAL PSYCHOLOGY

ANNUAL MEETING AND LUNCHEON

The annual meeting of the Institute of Medical Psychology was held at the Wharnecliffe Rooms, London, on April 15th. Sir HENRY BRACKENBURY, chairman of the council of the Institute, in reporting on the work of the year, said that two signal marks of public approval had been given. One was the acceptance of the presidency by the Duke of Kent, who had also presided at a dinner in aid of the Institute, and the other was the recognition of the Institute by the University of London as an authorized centre of teaching for its diploma in psychology.

It was a valuable part of the Institute's work, Sir Henry Brackenbury continued, to provide teaching courses for general practitioners who felt the need of becoming more familiar with the application and practice of psychotherapy, for other medical men and women who intended to specialize in that branch of medicine, and for teachers, social workers, and other members of the lay public who wished to understand the general nature of functional nervous cases. He hoped that the efficiency that the Institute had shown in this sphere would lead to its definite association in some form or other with the new British Post-Graduate Medical School. The fact that quite recently a number of other organizations had arisen whose aims and activities were almost the same as those of the Institute might be all to the good. The Institute claimed no monopoly of good work, though it had the advantage of pioneer and longer experience than any other such body in this country. There was clearly room, especially in some populous provincial centres, for other institutes conducted on the same lines; but it might lead to some public bewilderment and undesirable dissipation of effort if a number of organizations or clinics became established with closely analogous, if not identical, aims within a limited area or appealing to approximately the same public for support.

ONE THOUSAND NEW PATIENTS

Lord HOLLENDEN, the treasurer, said that last year the Institute had over one thousand new patients, more than one-third of whom were children. There had been a tenfold increase in the number of children treated during the last fifteen years. The cost of treating the cases was just over £8,000 annually, not an exorbitant sum when it was remembered that the treatment provided meant about 17,000 hours of medical time. The payment made by patients worked out at about 2s. 6d. per attendance. At the normal Harley Street charges the cost of treatment would be in the neighbourhood of £50,000 a year. The total income was rather over £9,000, but as this included nearly £1,500 raised as the result of a special broadcast appeal, some £550 as a result of the dinner presided over by the Duke of Kent, and a further £360 from a legacy, the normal income was obviously insufficient to meet the annual cost, and in fact there was a deficiency of nearly £1,600. As the result of the broadcast appeal it had been possible to appoint a small number of part-time doctors for a period of twelve months, so that the waiting-list was being substantially reduced.

MENTAL HEALTH AND GOOD CITIZENSHIP

The principal speaker at the ensuing luncheon was LORD ALLEN OF HURTWOOD, who said how greatly the Institute appealed to him as a parent—a member of a "profession" which at long last was being taken seriously in this country—an educationist, and especially as a politician. Democracy was overshadowed in almost every country, and if the British system of democracy was to remain equal to its new task in a world of increasing complexity, attention must be paid not only to improving the machinery of government, but to the mental health of the citizens. Government by consent required a well-equipped public opinion. Modern life, with its increasing speed of development and its profound economic distress, was bearing hardly upon the human mind. Anxiety was an all-pervading characteristic of our time. It had been estimated that one out of every thirteen citizens was suffering from nervous maladjustment, and that one-third of the amount expended in health insurance benefits was necessitated by the troubles due to nerve strain or mistakes in the early training of the population. Fortunately, medical science was now attaching far more importance than ever before to the subject of mental health, and in this direction the Institute of Medical Psychology had been one of the great pioneers. Its first task was to provide an opportunity for curative treatment and research, but it was now realizing the urgency of extending its work in the direction of prevention. No money could be more profitably allocated than for this preventive work on behalf of the new generation.

"If we are to avoid wasteful expenditure and equip a well-balanced nation of alert and healthy-minded citizens, we must take this new medical knowledge direct to the parent in the home, to the teacher in the school, and to the general practitioner in his local work. . . . The preventive work of medical science in the sphere of mental well-being would do more to protect democracy by giving us a nation of healthy-minded citizens than anything we politicians can do through the statute book."

THE CHANGED ATTITUDE TOWARDS MEDICAL PSYCHOLOGY

Dr. J. R. REES, medical director of the Institute, said that fifteen years ago the Institute (then known as the Tavistock Clinic) was a pioneer in the little-known science of medical psychology. Its endeavours had more lately been supplemented by many new clinics and hospital departments working on similar lines, but even the combined effort of all was still able to tackle no more than a fraction of mental distress. During this period there had been a striking change in the attitude towards medical psychology taken by the public. Doctors who devoted their lives to this subject and to the alleviation of mental sickness by such methods were no longer regarded as cranks. He referred to the report to which Lord Allen had obliquely alluded—a careful investigation of persons drawing sickness insurance pay whose illnesses had continued so long that a second opinion was taken. Although only a very small proportion of these cases had originally been classified as due to emotional disorder, subsequent investigation had shown that psychological illnesses—mainly states of anxiety—were often behind such diagnoses as anaemia, debility, and gastritis. Of the group investigated 33.5 per cent. was given as a conservative estimate of the proportion of psychological neurotic disorders.

The figures of the follow-up department at the Institute (Dr. Rees continued) showed that the proportion permanently relieved or cured remained fairly steady at something over 60 per cent. The results in cases of delinquency referred to it by the courts were not so good, probably for the reason that the man who regarded his treatment as part of his sentence was less willing to co-operate. Some of these patients, however, treated while still inmates of prisons, had done well, and he gave examples. "The more we see of delinquency and its treatment, the more obvious it becomes that prevention—the clearing up of abnormal traits in childhood—is what matters most."

The third All-Russian Congress of Physiotherapy will be held at Odessa from August 25th to 30th. The principal subjects for discussion are: hyperergy and physical therapy; acute infectious diseases and physical therapy; consequences of injuries and physical therapy; vegetative nervous system and physical therapy; short waves in biology and medicine; significance of the skin in the mechanism of physiotherapeutic actions. The inaugural reports will be presented by Professors Brustein (Moscow), Anikin (Moscow), Nilsen (Sevastopol), Broderson (Leningrad), Plotnikov (Moscow), and Rachmanov (Moscow). Further information may be had from the president of the committee, Professor S. A. Brustein, (Moscow, U.S.S.R., Serebrjanny per. 5, Room 7). Medical visitors from other countries should apply to the travel bureau "Inturist" for advice about visa and arrangements for travel.

Obituary

J. A. BRAXTON HICKS, M.D., M.R.C.P., D.P.H.

Late Director of Pathological Laboratories, Westminster Hospital

We regret to announce the death on April 7th, at the age of 50, of Dr. John Athelstan Braxton Hicks.

Dr. Braxton Hicks was educated at Epsom and the Westminster Hospital, and devoted to pathology all his professional life. From his teacher and predecessor, Grainger Hebb, he inherited a high estimate of the importance of morbid anatomy, now so much undervalued; and since in his earlier days the separation of bacteriology and biochemistry was not so precise as it is to-day, his first-hand knowledge of pathology in all its aspects made his opinion one of great value. He was for a good many years Reader in Pathology in the University of London, and as a teacher was highly valued by students. From him they learnt far more than mere pathological details. They learnt something of the philosophical basis of medicine and a great deal about their fellow men and of the world in which they were to practise. His dicta were perhaps cynically expressed, but always had an underlying emphasis on the importance of unprejudiced observation, the avoidance of cant and humbug, and of the duty of hard work. A year or two back Braxton Hicks resigned his teaching appointment and took up a post as pathologist in charge of group laboratories under the London County Council. His contributions to the literature of pathology were not very numerous, but up and down the country there are pathologists in important posts who look back to his example and training as the source of their interest in the subject and the foundation of their success in practice.

It would give a wrong impression of the man if it were not stated that there was another side to his character, which brought students, colleagues, and nurses all to seek his aid in difficulties, sure as they were that nothing would be too much trouble if he could help. He was popular among the students; he played hockey, and played well, up to a few years ago, and was active in the students' club interests, and particularly helpful in the organization of dances. His daily presence in the hospital had a valuable unifying influence. He was a man whose solid worth was not appreciated to the full by those who came in contact with him only casually.

E. M. HAINWORTH, M.D., F.R.C.S.

Consulting Surgeon, Royal Infirmary, Hull

Dr. Edward Marrack Hainworth, who died on April 9th at the age of 65, was a very distinguished surgeon of the East Riding, working for the last forty years in the Royal Infirmary and Children's Hospital, Hull.

After a brilliant career as scholar, student, and house-surgeon at St. Thomas's Hospital he settled in Hull—retiring from practice only last year. His degrees and diplomas included the M.D., B.S., and B.Sc. of London University, and the Fellowship of the Royal College of Surgeons of England. He did much useful and self-sacrificing work on the managing committees of his two hospitals and for their honorary staffs. For the local Branch of the British Medical Association he was honorary secretary from 1901 to 1907, and afterwards its president. After the war he was awarded the M.B.E. for his surgical work at the V.A.D. Hospital: he was also medical assessor at the local county court. This record indicates the respect and confidence he inspired with the public and his professional brethren.

Dr. F. C. EVE writes: As a surgeon Hainworth revelled in his work and was remarkable for his speed in operating. A ward sister told me once, "His cases give no trouble to anybody": that is the acid test of surgery. He was enthusiastic as a golfer and gardener, and proved a charming host at his delightful house at Kirk Ella. Delay, or stymies, he did not suffer gladly, and although on such occasions he might at times bark loudly, he would never bite. Boyish and human, he had lots of friends and no enemies. Always brimful of health, energy, and cheeriness, it was with astonishment and dismay that we heard of his death from cryptogenetic septicaemia, only a few days after playing golf as usual. His unique personality and usefulness will leave a gap not really to be filled. At his funeral in Kirk Ella Church the large congregation was evidently astrain with sorrow. He and his wife were everything to each other: to her the sympathy of the neighbourhood most exceptionally extends.

G. D. ST. CLAIR THOM, C.B., C.M.G., C.B.E.

Colonel, late R.A.M.C.; Superintendent, Edinburgh Royal Infirmary

The death took place suddenly on April 7th of Colonel George David St. Clair Thom, who had been superintendent of the Royal Infirmary of Edinburgh since January, 1924.

A son of the late George Thom, LL.D., he was born at Madras in 1870, received his preliminary education at Dollar Academy, and, after a medical course at Edinburgh University, graduated M.B., C.M. in 1893. He joined the Royal Army Medical Corps in the following year, and went to South Africa in February, 1900. During the latter part of the South African War he was registrar of No. 20 General Hospital, in which he also conducted the surgical work. In 1903 he passed with distinction the examination for promotion to the rank of major, and qualified as a specialist in diseases of the ear, nose, and throat. Later he spent some ten years in India, being especially engaged in the management of military hospitals. At the beginning of the Great War Colonel Thom was engaged in the training of Scottish field ambulances at Bridge of Allan, and he later went out to Gallipoli with the 52nd Division. He was at Anzac and Mudros throughout the Dardanelles campaign, and at Anzac had charge of the arrangements for receiving the wounded on the beach and their conveyance to the hospital ships. For his services in this campaign he received the C.M.G. He was thereafter recalled to the War Office, where he acted as Deputy Assistant Director-General, and he was later A.D.M.S. of the 32nd Division and D.D.M.S. of the 2nd Army Corps in France. For his services in France Colonel Thom received the C.B. After the armistice, in January, 1919, he was sent out to North Russia as D.D.M.S. of the allied force at Archangel. Here he was responsible for the medical administration of units over an immense area, with bases at Archangel and Murmansk and extending over lines of communication 200 miles south from the former and 100 miles from the latter. There was also a complicated sleigh transport by road in winter and by paddle steamer on the River Dwina in summer, extending some 200 miles from Archangel to the front line. His responsibility was thus very great, and he had to make frequent journeys of inspection to the numerous small hospitals and aid posts. It was a striking testimony to the efficiency of his arrangements that, although there were threatenings of cholera and small-pox, and although dysentery was rife all over the area, no serious epidemic broke out during his stay in North Russia, and the number of deaths in the Allied forces was very small. For his services in North Russia Colonel Thom was awarded the C.B.E. On his return from Archangel in 1919, he was appointed A.D.M.S. in the Home Counties area (west), and during the next few years he served as a member of two War Office committees.

Upon the post of superintendent of the Royal Infirmary of Edinburgh falling vacant at the end of 1923 he was chosen to succeed Sir Joseph Fayrer. During his service there Colonel Thom became highly popular with the staff, and his efficiency as an organizer and administrator produced entire smoothness in the running of this great institution. His energy and tactfulness were unfailing, and he had earned the highest praise from the managers, the staff, and all others with whom he came in contact. Colonel Thom had reached the retiring age of 65 in February of this year, but had been asked by the managers of the Infirmary to remain as superintendent for another year. He is survived by a widow and one son, who is an officer in the Royal Tank Corps. A memorial service was held on April 10th in St. Peter's Episcopal Church, Edinburgh, which was attended by representatives of the Board of Management of the Infirmary, of the staff, and by numerous representative Edinburgh citizens.

THE LATE SIR JOHN ROSE BRADFORD

Dr. A. J. WALKER, a medical graduate of McGill University, writes from Liverpool: During the war, as laboratory technician in one of the Canadian hospitals in France, I have the most vivid recollections of the visits of Sir John Rose Bradford when he was the consulting physican to that area. The door of the laboratory opened and an impeccably groomed staff officer entered who, with a cheerful smile and greeting, seated himself on one of the high stools. From one pocket a well-worn tobacco pouch was produced, from the other papers, and a wholly disreputable-looking cigarette was soon elaborated. He was then ready to inquire about the patients seen on the previous visit, for whom his memory was positively uncanny. The work in hand was commented upon always with encouragement. When the new arrivals were reported then began the visits to the patients. These beggar description—those who knew him will understand—patients and staff alike hated to see him leave. Personally I feel that I have lost a kindly friend.

Dr. HUMPHRY J. WHEELER, who died in London on April 2nd, at the age of 70, was a member of an old-established family in High Wycombe, who had done much to foster the chairmaking industry and raise the town to its present importance in the industrial world. Dr. Wheeler received his medical education at St. George's Hospital, where he was house-surgeon, at Newcastle-on-Tyne, and Paris; graduated M.B. in 1887 and M.D. in 1889 at Durham; and received the English Conjoint diplomas in 1887. He returned to his native town and entered into practice in 1889, retiring in 1913. On the outbreak of war he joined the 13th London Regiment (Territorial) as medical officer, remaining until 1918, when he went to the Ministry of Pensions, retiring from that position after about nine years' service.

The death of Dr. WILLIAM S. GIBSON of Elmwood Avenue, Belfast, on April 6th, after a short illness, removes from a circle of professional brethren and patients one of the most able surgeons of the younger generation, before whom there was opening a career of much promise. He was the son of the late Dr. William Gibson of Belfast. He received his early education at the Belfast Royal Academy, and had a distinguished medical career at the Queen's University, Belfast, from which he graduated M.B., B.Ch. with honours in 1922. After post-graduate study and experience in England he returned to Belfast as a specialist in the surgery of the ear, nose, and throat. His services were eagerly sought, and in a short time he was appointed surgeon both to the Benn Eye, Ear, and Throat Hospital and to the aural department of the Ulster Hospital for Children and Women. The tragedy of his death at the early age of 37 has caused deep sorrow and widespread sympathy for his young wife and family. His was an unassuming character, coupled with undoubted ability; his work was efficient in a high degree and his advice had always the hallmark of ripe experience. Before him lay a future of prosperity and appreciation, and this adds a deeper pathos to the sudden ending of a useful career.

We regret to announce the death of SHEPHERD DAWSON, M.A., D.Sc., consulting psychologist to the Royal Hospital for Sick Children, Glasgow. Dr. Dawson was well known as one of the leading psychologists in Scotland. Last year, at the Aberdeen meeting of the British Association, he was president of the Section of Psychology. He was associated with the late Dr. H. J. Watt in an investigation into the effect of disease on the intellect. When Dr. Watt died he supervised the research. His results were published in the *Archives of Disease in Childhood* and in a special publication of the Medical Research Council. Although not himself a member of the medical profession he was an active member of the honorary staff of the Royal Hospital for Sick Children, Glasgow, in carrying on a "psychological" clinic in collaboration with the physicians of the hospital. He was much interested in the application of statistical method to scientific problems, and willingly aided any worker in this field.

We regret to announce the death of Mr. GILBERT BERTRAM WARBURTON, who recently retired from the post of senior surgeon to the Royal Manchester Children's Hospital on account of continued ill-health. Educated at Manchester University, he took his medical degrees in 1907, and subsequently proceeded to the Ch.M. in 1913. In 1912 he took the Fellowship of the Royal College of Surgeons of England. He held many surgical appointments at the Manchester Royal Infirmary, where he was resident surgical officer in the early years of the war. In 1917 he joined the R.A.M.C. and served in Egypt till the armistice, attaining the rank of major surgical specialist to the 76th C.C.S., E.E.F., and was mentioned in dispatches. On his return to civil life he was appointed surgeon to the Royal Manchester Children's Hospital, where he worked till his health finally broke down last year. He was deeply interested in hare-lip and cleft-palate surgery, and made communications to the medical press on this subject. He also did valuable work as visiting surgeon to the Bethesda Home for Crippled Children and as honorary consulting surgeon to the Manchester and Salford Crippled Children's Help Society. Since 1922 he had been visiting surgeon to the Withington Hospital, and was taking part in the rapid development of this hospital since its transfer to the control of the Manchester City Council. His widow survived him only a few days, and he leaves three sons.

The profession and the community in West Norfolk have lost a much-valued member and friend in the death, on March 27th, of Dr. J. L. FORREST. Coming first to Terrington as long as thirty-four years ago as assistant to the late Dr. Gathergood, he remained continuously in practice there until his retirement in 1933. He was for many years medical officer of health for the Marshland Rural District Council, and his activities outside his work were largely concerned with educational matters in his area. Dr. Forrest was one of the few surviving original members of the West Norfolk Division of the British Medical Association, which was inaugurated in 1903. Four years later he became honorary secretary to the Division, and he held this post for no less a period than twenty-two years, during which time the membership and the activities of the Division steadily increased. On his resignation as secretary in 1929 he became vice-chairman of the Division, and chairman in 1931. After his retirement, in 1933, he did not sever his lifelong connexion with the Association, and as recently as last summer attended the Annual Meeting at Bournemouth as representative of his old Division. A retiring but kindly and much loved man, his death will be mourned by his colleagues and patients alike.

Universities and Colleges

UNIVERSITY OF LONDON

At its meeting on March 6th the Court had before it a letter from the London County Council informing it that the Council had decided to make a block maintenance grant of £129,000 in each of the academic years 1935–40, and a capital grant of £150,000 towards the capital requirements of the schools of the University other than those connected with the development of the Bloomsbury site. The cordial thanks of the Court, together with an expression of high appreciation of the support thus accorded to the work of the University, have been conveyed to the London County Council.

At a meeting of the Senate on March 20th it was resolved to institute, in accordance with the regulations on university titles, a University Chair of Surgery tenable at St. Bartholomew's Hospital Medical College.

The internal regulations were amended as follows:

That students who have passed the first examination for medical degrees and the second examination for medical degrees, Part I, be exempted from chemistry at the intermediate examination in science; and that the regulations for internal students in regard to exemptions at that examination (*Red Book*, 1934–5, p. 268) be amended accordingly.

The regulations for the first examination for medical degrees for internal and external students (*Red Book*, 1934–5, p. 209, and *Blue Book*, September, 1934, p. 249) were amended by the deletion of the following paragraph:

The subject or subjects in which any successful candidate may have distinguished himself will be shown in the list. Only those who have passed the whole examination at one time will be eligible for marks of distinction.

The regulations relating to the M.S. Examination, Branch 1 (Surgery), for external students (*Blue Book*, September, 1934, p. 272) were amended by the deletion of the words "20 October" in the first sentence of paragraph 2 under the heading "Date of Examination," and the substitution therefor of the words "1 November."

Dr. R. A. Young was appointed representative of the University at the twenty-first annual conference of the National Association for the Prevention of Tuberculosis at Southport from June 27th to 29th.

The ceremony of presentation for degrees will take place at the Royal Albert Hall on Wednesday, May 8th, at 2.30 p.m. The annual service for members of the University will be held at Westminster Abbey at 5.30 p.m., when the Bishop of Llandaff (the Right Rev. Timothy Rees, B.A.) will preach. The graduation dinner will take place in the evening at the Goldsmiths' Hall, when the Chancellor will preside.

Lectures

Mr. E. W. Fish, M.D., D.Sc., L.D.S., will deliver two lectures on "The Physiology of the Teeth" at University College on Tuesdays, May 7th and 14th, at 5 p.m., and a course of four lectures on "The Physiological Effects of Tropical Climate" will be delivered by Dr. D. H. K. Lee on Mondays, May 13th, 20th, 27th, and June 3rd, at 5 p.m.

Studentship

The Geoffrey E. Duveen Travelling Studentship in oto-rhino-laryngology, of the value of £450, will be awarded annually. The tenure shall, in the first instance, be for one year, part of which will be spent in study abroad, in accordance with a scheme approved by the Geoffrey E. Duveen Studentship Board, but it may be extended for one or two years, and during the extended period the student may be allowed to undertake research at the Royal Ear Hospital, or some other laboratory approved for the purpose. Grants for promotion of research in oto-rhino-laryngology, or in any part thereof, may also be made by the Trust Fund. Full particulars can be obtained from the Academic Registrar, South Kensington, S.W.7, and prescribed forms of application must reach him not later than June 12th, together with a statement of the nature of the research proposed and a scheme of study for the approval of the Board.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE

The following candidates have been approved at the examination indicated:

ACADEMIC POST-GRADUATE DIPLOMA IN PUBLIC HEALTH.—*Part I:* V. FitzC. Anderson, Lalage R. A. Benham, J. H. Blakelock, Edith J. R. Browne, Hilda L. Byett, H. S. Davies C. M. Dighe, D. Erskine, W. G. Evans, M. Farooq, O. M. Francis, H. A. Gilkes, J. V. Hurford, J. T. R. Lewis, Edyth L. Morris, V. Nada Rajah, R. M. M. C. Orpwood, L. M. Ram, C. J. Sanderson, H. Smith, T. Standring, E. W. Taylor, V. T. Vagh, J. D. V. Wijeyaratne, W. W. Wildman, R. A. Wilson.

ST. BARTHOLOMEW'S HOSPITAL MEDICAL COLLEGE

Helen Cave Memorial Scholarship

An entrance scholarship, value £200, will be offered for competition on May 27th, 1935. The scholarship will be confined to candidates who are the sons of registered medical practitioners, and who have passed the University of London matriculation examination or obtained exemption therefrom. Each candidate must send to the Dean, together with his entry form, (1) a statement as to his financial circumstances and those of his parents or guardian; (2) a letter from the head master of his school, giving a report on his character and his work. The candidate will be examined in (1) English, (2) French or German, (3) mathematics, (4) two other subjects, one from each of any two of the following groups: (*a*) history or geography, (*b*) Latin, Greek, French, or German, the language chosen not to be the same as in (2) above, (*c*) higher mathematics, biology, chemistry, or physics. The standard of the examination (to be held on May 27th to 30th inclusive) will be similar to that of the University of London matriculation. Intending candidates may obtain further information by application to the Dean of the Medical College, St. Bartholomew's Hospital, E.C.1, to whom they should apply for entry forms, which must be returned by May 1st.

NATIONAL UNIVERSITY OF IRELAND

At a meeting of the Senate on March 21st, with the Chancellor, Mr. Eamon de Valera, in the chair, Dr. Vernon O'Hea-Cussen was appointed to the lectureship in ophthalmology at University College, Cork.

The Senate decided to award the M.D. degree to Professor John C. Saunders of University College, Cork, for the published work lodged by him

It was resolved that the Richmond, Whitworth, and Hardwicke Hospitals, Dublin, should be recognized as a teaching centre for ophthalmology and rhinology.

Professor John C. Saunders was appointed representative of the University at the Royal Institute of Public Health Congress at Harrogate in June, and Professor William D. O'Kelly representative at the annual conference of the National Association for the Prevention of Tuberculosis at Southport in June.

Medico-Legal

FEES ON MIDWIFE'S SUMMONS

BROWN, THOM, PARTRIDGE, AND BUCKLEY *v.* MONMOUTHSHIRE COUNTY COUNCIL

A midwife who desires to obtain medical aid for a patient in an emergency can, under Section 14 of the Midwives Act, 1918, summon a registered medical practitioner, and the local supervising authority is obliged to pay the practitioner a "sufficient fee" with due allowance for mileage, according to a scale to be fixed by the Local Government Board. On December 20th, 1922, the Ministry issued its Circular 358, the back of which contains the scale. It lays down the fees for attendances, anaesthetics, suturing, visits, and attendances at the doctor's own surgery, and Clause 8 provides that:

"No fee shall be payable by the local supervising authority (1) where the doctor has agreed to attend the patient under arrangement made by or on behalf of the patient or by any club, medical institute, or other association of which the patient or her husband is a member, or when the doctor is under obligation to give the treatment to the patient under the National Health Insurance Acts, 1911 to 1922; (2) where the doctor receives or agrees to receive a fee from the patient or her representative; (3) in respect of any services performed by the doctor on any date later than the tenth day from the date of his first attendance, unless he has reported to the local supervising authority that he considers, for reasons stated by him, that his further attendance is necessary."

Drs. Partridge, Brown, Thom, and Buckley, practising in Monmouthshire, were at various times properly called in by midwives to attend mothers in an emergency. They became entitled to various sums: Dr. Brown to twenty-one guineas, Dr. Thom to eight guineas, Dr. Partridge to three guineas, and Dr. Buckley to eight guineas. The county council refused to pay these amounts on the ground that the first three doctors had an agreement with the Ebbw Vale Workmen's Medical Society under which they acted as doctors to that society, and that Dr. Buckley, the fourth, attended a number of persons who had a poundage system which entitled them to the services of a medical man, including midwifery attendance.

The four medical men sued for their fees in the county court, and the judge decided against them; he held that as the first three doctors had the possibility of recovering through the patients whom they attended, because those persons were entitled to benefit under the National Health Insurance Act, therefore the doctors would receive a "sufficient" fee. He interpreted the word "sufficient" according to whether or not there were some other source from which the fees could be obtained. He held that Dr. Buckley came within the prohibition laid down in Clause 8, Rule 1, as a doctor who had agreed to attend the patient under an arrangement made with a club, medical institute, or other association. The four doctors appealed.

THE MINISTRY "ULTRA VIRES"

The Court of Appeal has unanimously reversed the finding of the county court judge. The Master of the Rolls said that on reading Clause 8 of the circular it struck him at once as curious that he should find, in a table of fees which were to be payable, a definite decision or determination of certain cases where no fee was to be payable. The clause determined other matters which did not properly belong, and ought not to be appended to, a mere scale of fees. The authority was given power by the Act to recover the fee, but was not under a duty to recover it in all cases. He thought that Clause 8 seemed by anticipation to determine matters which might be suitable for consideration when proceedings were taken under this power, but which could not be determined beforehand and added to a scale of fees which were definitely to be paid to the medical practitioner. He thought that the phrase "sufficient fee" in the Act was only intended to lay down that the doctor should be properly remunerated for his services; he could not see that it had any relation to other sources from which payment might be made. He concluded that Clause 8 was bad and *ultra vires*, and that a definite duty was laid upon the local authority to pay a sufficient fee according to the scale.

Lord Justice Slesser found fault with the county court judge's conclusion that if, when the local authority came to consider what was a sufficient fee, it was satisfied that the doctor had already been adequately remunerated in some other way, then no fee at all should be payable, because the quantum of remuneration had been ascertained by reference to the poundage payments, and thus the quotation of sufficiency had been dealt with. His lordship did not consider that the question of sufficiency was one which the local authority had any power to determine at all. It was determined according to a scale to be fixed by the Local Government Board, now the Ministry of Health. He pointed out that the obligation placed upon the midwife of calling in the doctor was a statutory one. She was probably acting as the agent of the local authority; her act did not in any sense create a contract between the patient and the doctor, and had nothing to do with any contract which had already been made. He suggested that if arrangements were to be made short of legislation altering the present position, they could be made by altering the contractual relations between the patients and the local clubs or doctors, and possibly by excluding midwifery altogether from the contract.

Lord Justice Romer said that the Ministry of Health had no power when prescribing a scale to discriminate between one medical practitioner and another. It could not say that a doctor of medicine should be paid at a higher rate than one with a lower degree. Still less could it say that a doctor whose patients could afford to pay more should receive less than the doctor whose patients paid smaller fees. The Ministry was said to have made the regulation with a view to medical practitioners who were adequately remunerated from other sources, but in fact its regulation was not confined to such doctors. Medical men often worked for wholly inadequate fees, and the Ministry had chosen by this regulation to exclude from the benefit of the section medical men who might have been wholly inadequately remunerated. It could not be argued that a medical man might be paid twice over; if the midwife called him in, the patient was not on that account bound to pay him anything. He thought that Rule (3), limiting the right of the doctor to receive a fee for attendance in a certain emergency, was if possible even worse than the others.

This unanimous decision of the Court of Appeal therefore establishes two points: (1) that Section 14 of the Midwives Act, 1918, does not give the local authority any power to decide the question of what is a sufficient fee; and (2) that the Ministry has only power to lay down a scale of fees and cannot add to this scale provisions for depriving a doctor of a fee. The decision may in due course be reviewed by the House of Lords.

Medical Notes in Parliament

[FROM OUR PARLIAMENTARY CORRESPONDENT]

THE BUDGET

Mr. Chamberlain opened the Budget for 1935–6 in the House of Commons on April 15th. He said the improvement in trade had worked down to the purchasing power of the people. Compared with the previous year the people of the United Kingdom consumed 80,000 more tons of sugar in 1934, smoked 6,500,000 lb. more tobacco, and drank 270,000,000 more pints of beer and 700,000,000 more cups of tea. In the coming year £14,500,000 more would be provided for civil and social services. He proposed to make the Income Tax exemption limit £125 for all types of income and to charge the first £135 of taxable income at 1s. 6d, in the £. The next £40 of income would be taxed at the full rate of 4s. 6d. instead of at 2s. 3d. The personal allowance of the married man would be raised from £150 to £170, and that for second and subsequent children to £50, instead of £40. Speaking of the last concession Mr. Chamberlain said he looked on the continued diminution of the birth rate in this country with considerable apprehension. At the present time it might seem that we had here a larger population than we were able to support in England. We also knew the difficulty which the Dominions found in accommodating a larger population when they themselves were troubled with unemployment. Nevertheless he had a feeling that the time would not be far distant when the countries of the British Empire would be crying out for more citizens of the right breed and when this country would not be able to supply the demand. If to-day Parliament could give even a little help to those who were carrying on the race, the money would not be wasted. He proposed to raise the allowance for each child after the first to £50, however many children there were. Mr. Chamberlain also proposed increases in the duties on hackney carriages and goods vehicles driven by Diesel engines, on the heavy oil fuel used for such vehicles, on rice imported in the husk, on soya beans, and on sugar treated to reduce its polarization. He proposed reductions in the Entertainments Duty, and the exemption from Estate Duty of annuities up to £52. He announced the restoration, from July 1st, 1935, of the remaining half of the "cuts" in the salaries or emoluments of insurance doctors and chemists, civil servants, members of the Defence Forces, teachers, police, and other classes affected by the emergency reductions of 1931.

Discussion of the Budget was continued on subsequent days, and the Easter Recess was arranged from April 18th till April 29th. The House of Lords has adjourned till April 30th.

Salaries of Public Health Medical Officers

Replying to Captain Elliston, on April 10th, Sir HILTON YOUNG said he had no power to enforce local authorities to adopt the recommendations of the Askwith memorandum on salaries of whole-time public health medical officers, but in those cases where his approval was required to the appointment of a medical officer of health it was his practice, where necessary, to call the special attention of the local authority to the recommendations.

Captain Elliston was informed by Mr. RAMSBOTHAM, on April 11th, that the rate of salary paid to a school medical officer was a matter primarily within the discretion of a local education authority, and the Board of Education was not prepared to interfere with that discretion unless the salary paid appeared to be either unduly extravagant or so low as to be likely to endanger the efficiency of the service. There was no ground for supposing that the latter was the case in York.

Infectious Diseases in Leeds

Mr. SHAKESPEARE told Mr. Groves, on April 11th, that the increase in cases of diphtheria in Leeds during the year 1934 accorded with the general upward trend in the incidence of the disease which had recently affected all the large urban centres, especially those in the West Riding of Yorkshire. There was nothing to show that the increase in immunization at Leeds had produced large numbers of carriers who had conveyed the disease to other children while not suffering themselves, or that there were sanitary conditions in Leeds which accounted for the increase.

In reply to Mr. Groves, on the same day, Sir HILTON YOUNG stated that figures giving the number of cases of measles and scarlet fever in Leeds from 1931 to 1935 were as follows:

		Number of Notified Cases. Scarlet Fever	Measles
Four weeks ending	January 31st, 1931 ...	140	46
,, ,,	February 28th, 1931...	144	91
,, ,,	January 30th, 1932 ...	100	97
,, ,,	February 27th, 1932...	79	188
,, ,,	January 28th, 1933 ...	78	23
,, ,,	February 25th, 1933...	78	34
,, ,,	January 27th, 1934 ...	240	2,254
,, ,,	February 27th, 1934...	178	3,656
,, ,,	January 26th, 1935 ...	215	20
,, ,,	February 23rd, 1935...	187	15

No separate figures were available for scarlatina, which was included with scarlet fever. Measles did not include German measles, of which no figures were available.

Decrease in Road Accidents.—Mr. HORE-BELISHA told Sir Gifford Fox, on April 10th, that the number of persons killed in road accidents in Great Britain per 100,000 of the total population was 15.9 in 1933 and 16.2 in 1934. The persons killed and injured on the roads during the first three months of this year were estimated to have been 6 per cent. less than in the corresponding period of 1934, while there were approximately 12 per cent. more mechanically propelled road vehicles licensed. Thus there had been a reduction of over thirty per day in the number of those killed and injured, or a total of 2,845 in the period, while the number of motor vehicles licensed had increased by 224,237—at the rate of 600 per day on every day for the last six months. During the first fortnight of the 30 miles per hour limit there was a reduction of 16 per cent. in the numbers of persons killed and injured in county police districts, and a reduction of 21.5 per cent. in city and town police districts, compared with the corresponding period in 1934. Sir JOHN GILMOUR told Mr. Lunn, on April 11th, that 238,946 people had been killed or injured on the roads in 1934, but it must not be inferred that all the deaths and injuries on the roads were attributable to persons driving motor vehicles dangerously or when under the influence of intoxicating liquor.

Treatment at Ex-Service Men's Hospitals.—Replying to Sir George Jones on April 11th, Major TRYON stated that it was not the practice of the Ministry to give treatment to members of the permanent lay staff of the Department, not being ex-service men, at any of its own clinics or hospitals. In a very few cases occasional out-patient treatment had been permitted at Bulinga Street, but always at the patient's own charge. Roehampton Hospital belonged to an independent voluntary committee, whose own arrangements provided for the treatment of a small number of non-ex-service men. One member of the Ministry's permanent staff was recently admitted by the committee under these arrangements, but at the cost of the patient and not of public funds. The suggestion that ex-service men had been in difficulty about obtaining treatment at Roehampton or Bulinga Street was not in accordance with the facts. The accommodation at Roehampton and Bulinga Street was ample for the treatment of all ex-service men found to be in need of treatment for their war disabilities.

Fatal Industrial Accidents.—Mr. STANLEY told Sir Gifford Fox, on April 11th, that in those employments in which there was statutory obligation to report accidents the total numbers of persons whose deaths were reported as the result of accidents occurring in 1933 and 1934 were 2,180 and 2,589 respectively. These totals were equivalent to rates of approximately 0.05 and 0.06 respectively per 1,000 of the population of Great Britain. The figures covered persons employed in factories and workshops and on other premises—such as docks, wharves, and buildings, which were subject to the Factory and Workshops Acts, at mines and quarries, on railways, and on trading and fishing vessels registered in this country.

Chinese Eggs: Further Examinations.—Mr. SHAKESPEARE told Mr. Haslam, on April 11th, that it was proposed to have certain further examinations made into Chinese eggs not in shell as imported into this country. Investigations had been directed both to disease-producing micro-organisms and also to other non-pathogenic organisms, among which putrefactive organisms were included. There was at present no need to publish the results.

Cream in Milk Pasteurization.—Replying to Sir A. Wilson on April 11th, Mr. SHAKESPEARE said he was not aware that cream was frequently removed from milk before pasteurization by large processing organizations, and that an equivalent amount of sterile fat was added in the form of powdered milk. The Milk and Dairies (Amendment) Act, 1922, prohibited the sale as milk of any liquid in the making of which dried milk had been used.

Cleansing of Shellfish.—On April 15th Dr. ELLIOT informed Sir J. Pybus that the Minister of Health and he had considered requiring all shellfish to be cleansed before they were marketed for human food. They were not, however, satisfied that an order of so far-reaching a character would be justified. The matter would be the subject of further inquiry. Financial assistance to the Brightlingsea Urban District Council in respect of the expenditure incurred by them for cleansing oysters was also under consideration.

Removal to Hospital under Magistrate's Order.—Sir HILTON YOUNG, in a written reply on April 15th to Mr. Groves, said that he was not aware that a cattleman at Iver, Bucks, was removed to hospital under a magistrate's order, although not suffering from any disease. The person referred to was certified to be suffering from a dangerous infectious disorder. Mr. GROVES asked under what section of what Act the medical officer of health applied for a magistrate's order. The Minister referred to the reply given on April 10th.

Pensions for Incapacitated War Orphans.—Colonel BURTON, on April 15th, asked the Minister of Pensions if he knew of the distressing position of certain incapacitated war orphans as a result of the regulation which precluded allowances being paid after the age of 21; and whether he would seek authority which would enable allowances to be continued in the case of totally incapacitated war orphans for so long as the infirmity existed. Major TRYON replied that the Government was not prepared to amend the Royal Pension Warrants in this manner. The Warrant provisions involved an important principle which had been maintained by all successive Governments since the war. A departure from this principle would involve the grant of life pensions to men and women on the score of infirmities in no way connected with war service. It would involve, in fact, the creation of a second generation of adult war pensioners. Pensions in similar cases had been going out of payment for many years past.

Calling the Doctor by Telephone.—On April 15th Colonel HENEAGE asked the Postmaster-General what response he had had to his advertisement drawing attention to the opportunities for calling a doctor for a sick child when a telephone was installed. Sir KINGSLEY WOOD said it was impossible to distinguish, among the new orders for telephone service now reaching the Post Office in large numbers, those which were attributable to a particular advertisement.

Medical News

The King has been graciously pleased to announce that he will open the British Post-Graduate Medical School at Hammersmith on Monday, May 13th. His Majesty will be accompanied by the Queen, and after the opening ceremony Their Majesties will inspect the School and the Hospital.

The annual clinical meeting of the Edinburgh Branch of the British Medical Association will be held in the Royal Infirmary on Wednesday, April 24th. All members of the profession are invited. At 2.30 p.m. Professor R. W. Johnstone will lecture on sex hormone therapy in women, and the clinical demonstrations will begin at 4 p.m. Dinner will be held in the Scottish House, 7, Drumsheugh Gardens, at 7.30, with the President, Dr. A. A. M'Whan, in the chair, and the Earl of Home will be the principal guest.

There will be a special discussion on "The Problem of Prophylaxis in Pulmonary Tuberculosis" at a joint meeting of the Sections of Epidemiology and State Medicine and Disease in Children of the Royal Society of Medicine on Friday, April 26th, at 8.30 p.m. The openers will be Dr. Arthur MacNalty, Chief Medical Officer of the Ministry of Health and the Board of Education, and Dr. Gregory Kayne (Epidemiology); Dr. Charles Miller and Dr. Reginald Lightwood (Children); and Dr. D. A. Powell (Society of Medical Officers of Health). Members of the Society of Medical Officers of Health have been invited to attend the meeting and to take part in the discussion.

A meeting of the St. John's Hospital Dermatological Society will be held at St. John's Hospital, 49, Leicester Square, W.C., on Wednesday, April 24th, at 4.15 p.m., when Mr. Philip H. Gregory, Ph.D., will read a paper entitled "The Parasitic Activity of the Ringworm Fungi."

A meeting of the Medico-Legal Society will be held at 11, Chandos Street, W., on Thursday, April 25th, at 8.30 p.m., when a paper will be read by Dr. Emanuel Miller on "The Medico-Legal Aspects of Aberrations in Adolescence." A discussion will follow.

Under the auspices of the Individual Psychology Club, Dr. Alfred Adler will deliver three public lectures in London, at Conway Hall, Red Lion Square, W.C., on April 29th, May 1st, and May 3rd, at 8 p.m. Tickets of admission, price 5s. and 2s. 6d., may be had from Mrs. Leins, 177, Regent Street, W.1.

The Fellowship of Medicine (1, Wimpole Street, W.) announces that an afternoon course in psychological medicine will be given at Maudsley Hospital from April 23rd to May 31st. Other forthcoming courses include dermatology at St. John's Hospital, Leicester Square, W.C., April 29th to June 2nd; medicine, surgery, and gynaecology at Royal Waterloo Hospital, April 29th to May 11th; thoracic surgery at Brompton Hospital, May 13th to 18th; M.R.C.P. course at Brompton Hospital in June; M.R.C.P. course in chest and heart diseases at Victoria Park Hospital, during June; M.R.C.P. clinical and pathological course at National Temperance Hospital. Week-end courses will be given as follows: cardiology at Victoria Park Hospital, May 4th and 5th; chest diseases at Brompton Hospital, May 11th and 12th; fevers at Park Hospital, Hither Green, S.E., June 15th and 16th; obstetrics at City of London Maternity Hospital, May 25th and 26th. Courses of instruction arranged by the Fellowship are open only to members and associates, with the exception of the dermatology course.

The third Congress of the French Society of Phoniatrics will be held at the Hôtel Chambon, 96, Rue du Cherche Midi, Paris, under the presidency of Professor Moure, on May 18th, when Professor Terracol will read a paper on the role of endocrine glands in the physiology of the voice.

The ninety-fourth Congress of German Science and Medicine, which had been arranged for this year, has been postponed to May 24th, 1936, when it will be held in Dresden under the presidency of Professor Sauerbruch.

The 150th anniversary of the General Hospital at Vienna will be celebrated on May 18th, when a statue to the first director, Johann Peter Frank, will be unveiled, and an address delivered by Professor J. Wagner-Jauregg. A festival congress will be held from May 13th to 25th.

The issue of *Paris Médicale* for March 30th is devoted to war gas.

Messrs. J. and A. Churchill Ltd. announce for early publication *Recent Advances in Laryngology and Otology*, by Mr. R. Scott Stevenson; a fourth edition of Eden and Lockyer's *Gynaecology*, edited by Professor H. Beckwith Whitehouse; and a third edition of *Recent Advances in Diseases of Children*, by Drs. W. J. Pearson and W. G. Wyllie.

The King has approved the appointment of Dr. John Innes Moir to be a Member of the Executive Council of the Colony of British Honduras.

A memorial signed by eminent members of medical, scientific, and social organizations, urging that a standard be fixed for bread, and that meal flour and bread shall be protected from deterioration and adulteration, has been forwarded to the Government. Further information can be obtained from the Honorary Secretary of the Bread and Food Reform League, 37, Essex Street, W.C.2.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, B.M.A. House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs. Authors over-seas should indicate on MSS. if reprints are required, as proofs are not sent abroad.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBER** of the British Medical Association and the *British Medical Journal* is EUSTON 2111 (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 18, Kildare Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone: 24361 Edinburgh).

QUERIES AND ANSWERS

Treatment of Radium "Burn"

"INQUIRER" asks for suggestions in treating an "erythematous" condition following radium application after removal of carcinoma of the left breast. He writes: A female was operated upon when 33 years old, about one year nine months ago, for the radical removal of a moderately advanced carcinoma of the left breast. After removal she was treated for about six weeks with superficial *x* rays, and then, in five weeks' time, she had a month's treatment with radium. Very soon after this a redness of the skin—a radium "burn" or erythema—about three inches in diameter, around the previous position of the nipple, arose, and this has been treated with a mild disinfectant lotion and then smeared over with white vaseline and white lint, and a bandage applied. This has been done daily. Now the redness of the skin has increased to a diameter of about six inches. Sometimes it gets paler, and there is a circle of half an inch of normal white skin, now about two inches from the nipple position. The redness is most intense at the margin, but when pressed by the finger it temporarily disappears. Some red, irregular-shaped spots are thrown out a short distance

from the margin of the patch, but the main patch generally extends in time towards these and coalesces with them. There is a fair amount of itching at the margin. There is no recurrence of carcinoma, and about seven months ago the patient gave birth to a healthy female baby. Her menstruation periods are quite normal and she seems otherwise healthy.

Chronic Nasal Discharge in Children

Dr. M. O. ABDEEN (oto-laryngologist, Government Hospital, Alexandria, Egypt) writes in reply to "G. P." (March 16th, p. 568): The treatment of such children should be general and local. *General treatment*: (1) Carbohydrates and salt should be limited in their food. (2) Clothing should be just sufficient to keep them warm, as these children are usually over-clothed. (3) To be in the open air as much as possible. (4) General ultra-violet treatment to be given. (5) The following to be taken t.d.s.: tinct. iod., 2 minims, syrup. pruni, 1 drachm. Iodine, if tolerated, could be increased, and haliverol, 2 minims, taken after meals. *Local treatment*—(*a*) By the physician: Painting upper lip (as such patients usually have excoriations of their upper lips), also inside of nose, with 5 per cent. silver nitrate, followed by white precipitate ointment every second day. (*b*) By the parents: The nose is to be tickled to induce sneezing to clear the nose, as most children do not clear their noses properly. After the nose is cleared use the following drops twice daily, with head low down for the drops to reach the adenoids: adrenaline, 2 drachms, argyrol, 5 grains, aq., ad 1 ounce. Four drops in each nostril morning and evening. If tonsils or sinuses are diseased they should, of course, be treated, and the possibility of diphtheria should not be overlooked.

Income Tax

Allowance for Domestic Service

"G. B." asks if any information can be given as to the allowance over the whole country. He and his partners see insured and private patients at their residences, and three of the four partners employ two maids.

⁂ It is not possible to lay down a general rule where circumstances differ so much, but we may perhaps say that where two maids are kept and one looks after surgery and waiting room and answers the 'phone it is not uncommon for half the cost of board and lodging of the two maids to be allowed. In "G. B.'s" case only half the cost of *one* maid has been allowed, and that is less than usual in such circumstances, and in our opinion inadequate.

Motor Car Transactions

"J. B. F." had an "A" car, in respect of which he had a depreciation allowance of £23 for 1933–4. On October 1st, 1934, he sold that car for £32 and bought an "S" car for £149. What can he claim?

⁂ Presumably the £23 allowance was calculated at 20 per cent. on £115, which would leave the written-down value at £115 − £23 = £92. On that basis "J. B. F." can claim an "obsolescence" allowance of £92 − £32 = £60, as an expense of the year 1934—which would affect his liability for the financial year 1935–6. The "depreciation" allowance for that year will be £149 at 20 per cent.—that is, £30. The above is, of course, subject to any adjustment in respect of private use.

LETTERS, NOTES, ETC.

An Early Nursing Home

Miss M. L. SPACKMAN (Clitheroe) writes: About 1842—I cannot ascertain the exact date—a "sanatorium" was instituted in London to provide accommodation and nursing for middle-class people who, when ill, could not be looked after properly in their own homes or lodgings, and was conducted on the lines of a club. Life members gave a donation of ten guineas, annual members subscribed a guinea a year, and for this sum had the right to become in-patients at the inclusive charge of two guineas a week, or could appoint a nominee. A committee of members was responsible for the management. The "sanatorium" was a house near Regent's Park. On the ground floor were dining and drawing rooms, surgery, and quarters for a resident medical officer; on the first floor seven single bedrooms for men; on the second, six for women. They were comfortably furnished, and unless all were occupied a patient's relative or friend was permitted to engage one. The staff consisted of the resident medical officer, visiting physicians and surgeons, who were paid out of the sanatorium funds, a matron, nurses, and servants. Patients could be attended by their own doctors if they preferred. I am indebted to a contemporary publication of Messrs. W. and R. Chambers for this information.

The Pulse Rate in Tuberculosis

Dr. JAMES R. SALMOND (Burton-on-Trent) writes: I was interested to read in the *Journal* of March 23rd the remarks of Dr. R. S. Carey of Bristol, and fully agree with him as to the diagnostic value of the raised pulse rate in early tuberculosis. I well remember (as a medical student in Belfast) being present at one of the late J. E. McIlwaine's clinics at the Royal Victoria Hospital. The case was one of suspected early tuberculosis, and he stressed the point that if one was limited to making a single clinical observation in trying to diagnose a "suspected T.B." in its early stages he would in every case take the pulse rate. Finally, hundreds of Queen's men, all the world over, will remember the famous clinical rule of the late Professor James Lindsay: "A persistently fast and low-tension pulse should lead one to inquire for early tuberculosis or concealed alcoholism." The percussion note over the affected lung tissue is sometimes at first actually raised in the early stages, and the area of visible pulsation of the heart is diminished if that part of the lung is affected. Perhaps Dr. Carey may find this an explanation of the small area of cardiac dullness which he mentions as having observed in early cases of tuberculosis.

Early Medical Books

It is some considerable time since any noteworthy collection of early medical books came to auction in London: that which Messrs. Hodgson, Chancery Lane, are to disperse on April 26th contains several which are of interest, though incunabula and extreme rarities are absent from the list. The sixteenth century, however, is freely represented, though a good many of the books are of such minor importance that they are sold in lots of five, often without the titles being catalogued. Exceptions to this include the following. Erastus, *De Occultis Pharmacorum Potestatibus*, Basle, 1574; Coyttarus, *De Febre Purpura*, Paris, 1578; Fuchs, *Institutiones Medicinae*, Basle, 1583; Piso, *De Cognoscendis Internis Corporis Morbis*, Frankfurt, 1585; Valleriola, *Enarrationes Medicinales*, Lyons, 1589; Galea, *Tractatus de Pulsibus*, 1597; Saxonia, *De Phoenigmis*, 1593; Mercatus, *De Mulierum Affectionibus*, Venice, 1597; Costaeus, *De Igneis Medicinae Praesidiis*, Venice, 1595; Fabricius, *Pentateuchos Cheirurgicum*, Frankfurt, 1592, and *Opuscula Illustrium Medicorum de Dosibus*, Lyons, 1584; Campolongus, *De Arthitide*, 1592; Thriverus, *Universae Medicinae Methodus*, Leyden, 1592; Ulmus, *De Occultis in Re Medica Proprietatibus*, 1597; Faventius, *Consilia Medicinalia*, Venice, 1556; Tagautius, *De Chirurgica Institutione*, Lyons, 1560; Gordonius, *Opus Lilium Medicinae Inscriptum*, Lyons, 1559; Savonarola (J. M.), *Practica Canonica de Febribus*, Lyons, 1560. There are also a good many treatises dating from the succeeding century, of which the most interesting are perhaps Glisson's *Tractatus de Natura Substantiae Energetica*, with portrait by Dolle, 1672; Bellini, *De Urinibus et Pulsibus*, 1685; Heurnius, *De Morbis Milierum*, 1607; Willis, *De Fermentatione, de Febribus, et de Urinis*, 1660 and 1677. The critical will observe that there was no unanimity among these latter authors as to how the ablative plural should be declined in respect of urines. The eighteenth century volumes do not disclose any items of exceptional interest.

Osteopathy: Corrigendum

A correspondent (Mrs. Cecil Chesterton) draws our attention to a slip in the report of the first day's proceedings of the Osteopathy Committee (*Journal*, March 9th, p. 491) whereby the omission of a dash between question and answer makes a remark by Mr. Streeter appear as if it were the continuation of a question by Lord Dawson. Lord Dawson indicated the side of a spectacle frame as the diameter of the Eustachian tube, and Mr. Streeter, not Lord Dawson, added, "That is the diameter of the bony canal."

Vacancies

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 41, 42, 43, 44, 45, 46, 47, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *180*.